People & the Planet

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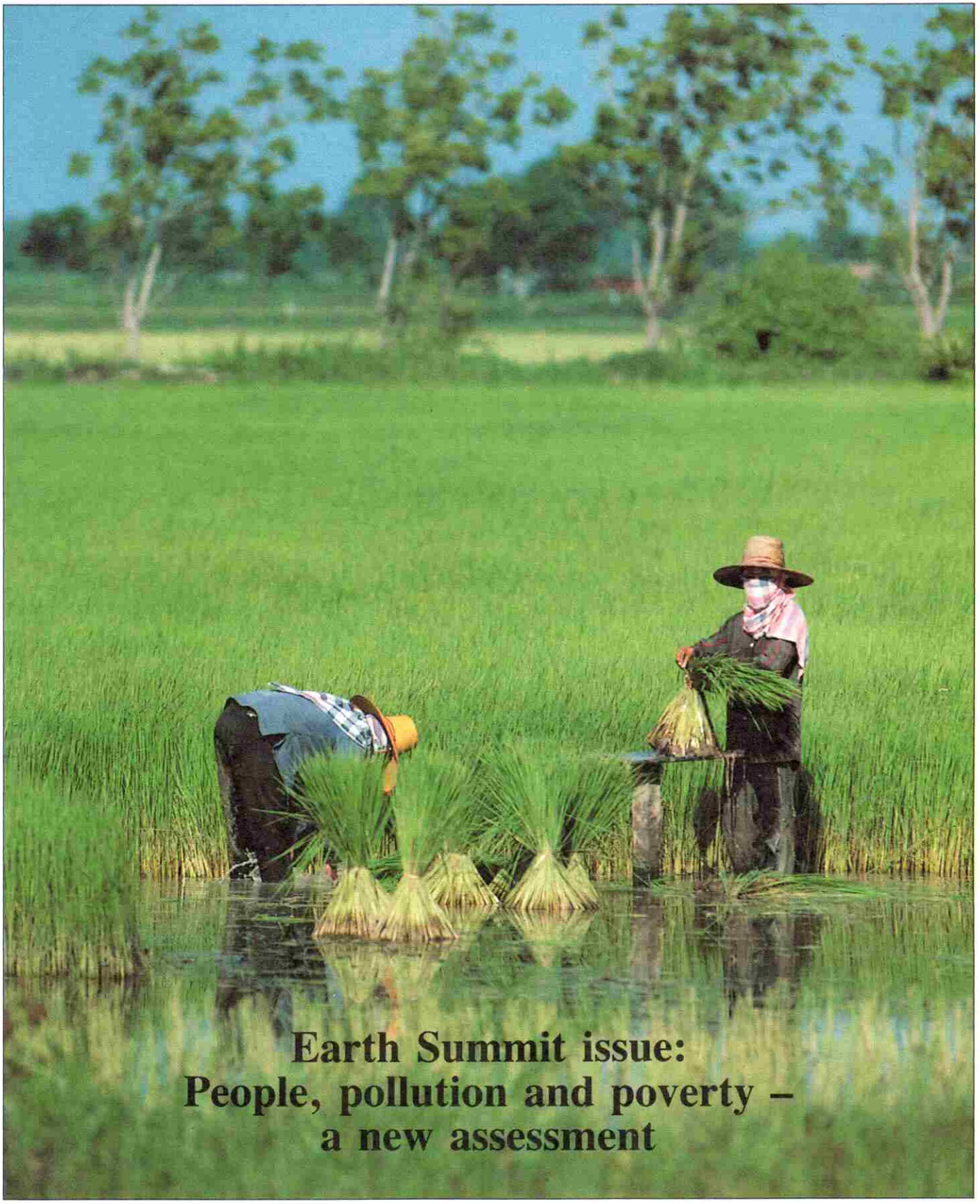

Earth Summit issue: People, pollution and poverty – a new assessment

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People & the Planet **is an experiment in inter-agency development journalism. Like its predecessor publication from IPPF,** *Earthwatch*, **it is a joint magazine of the United Nations Population Fund, the World Conservation Union and the International Planned Parenthood Federation. But unlike** *Earthwatch* **it has taken the process further by linking with other international organizations which have an interest in various aspects of population, environment and development.**

We are pleased to announce
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None of the sponsors, or supporters, of *People & the Planet* takes responsibility for individual articles in this publication. But all are united in their belief that the interrelated issues which it deals with need to be looked at in the round. People, their habits of consumption, their technologies and their numbers interact with the environment of our planet in ways which need to be explored and explained. And a path needs to be traced towards a sustainable future for healthy people living in a healthy world. That is the ambitious purpose of this publication, and one to which all our supporters subscribe.

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Cover: *Women harvesting rice, Thailand. Picture by Peter Charlesworth.*

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People & the Planet

Reason must prevail

As this first issue of *People & the Planet* goes to press, it seems that the immense two-year process of planning for the Earth Summit in Rio, may, like the mountains, have laboured mightily to bring forth a mouse. Last-minute negotiations at the UN Conference on Environment and Development (UNCED) may still go some way to save the day, but by linking the environmental challenge to development strategies, the UNCED discussions have, perhaps inevitably, put on the agenda many of those major issues of international politics and economics which have proved so intractable in other international fora. So it may be necessary for all those concerned about a sustainable future to lower their expectations from Rio, to notch up what tangible agreements can be made to stick, and to gain what comfort they can from the rethinking of the issues which it has undoubtedly caused.

On the question of population and the environment, both North and South have shown more than usual sensitivity. With some notable exceptions, in and outside the UNCED secretariat, there has been a marked reluctance to grasp the population nettle. Some Northern countries such as the United Kingdom have attempted to bring the issue forward but other developed countries have hesitated to do so. The developing countries led by the Group of 77 have preferred to concentrate attention on the North's consuming and polluting ways and its exploitation of the South through unfair trading terms, the heavy debt burden and its seeming unwillingness to help fund the transfer of new and less damaging technologies.

There will, it seems, be no historic Earth Charter setting out a sustainable course for future generations, only another 'declaration'. But, thanks to determined work within the UNCED Secretariat, something of a conceptual breakthrough on population and environment has been made in the central Agenda 21 document. As the articles by Joseph Wheeler and Louise Lassonde in this issue testify, the need to plan for people and the natural resources they depend upon at local, national, regional and international level in a co-ordinated way is now widely agreed. Unfortunately, when it comes to family planning, it seems as if a paradoxical step backwards has been taken. A strange alliance including the Holy See, led, at the final preparatory meeting in New York, to a weakening of any references to 'family planning', as if reproductive rights were not one of the central issues for women's freedom, health, wellbeing and productivity.

All of this testifies to the need for continued, honest and independent reporting of population and environment issues, with a special emphasis on reporting the realities of life for women and their families. The collaboration of a dozen or more population, environment and development agencies in doing this during this year of the Earth Summit is a hopeful sign that reason will, in the end, prevail.

John Rowley

NEWS FILE

Breakthrough in Pakistan

On March 1, the Pakistan National Conservation Strategy was approved by the Federal Cabinet meeting in a special session, *writes Ayub Qutub.*

It was the culmination of a four-year process of strategy formulation, in which over 3,000 government agencies, research institutions, independent organizations, individual experts, and concerned citizens were involved.

The Strategy has 14 core programme areas, calling for an investment of Rs 150 billion (US$ 6 billion) over the next 10 years, in maintaining soils in croplands, protecting watersheds and water bodies, supporting forestry, restoring rangelands, increasing irrigation and energy efficiencies, deploying renewables, preventing and abating industrial and vehicular pollution, and preserving the cultural heritage. Most interestingly, one strategic thrust is integrating the population and environment programmes of the country, with a planned outlay of Rs 20 billion (US$ 0.8 billion).

The Strategy recognizes that the past 25 years of effort in family planning has largely failed to reduce the fertility rate. There is a huge knowledge-practice gap. More than half of married couples know a specific family planning technique, less than 10 ten cent practise any. The NCS calls for accelerating the delivery of conventional family planning services, but suggests that the breakthrough will come in changing the motivations which determine the desired family size.

The NCS plans to disseminate the goals of family limitation among farmers, woodsmen, graziers, and fishers by inducting agriculture, forestry, livestock, fisheries extension workers into the campaign. They will be trained to graphically illustrate the effects on the next generation of land division, more rights on wood resources, more livestock on the same range, more fishing in the same stretch of river.

There is a wide variation in fertility rates across the country, ranging from an average of around five children in the large cities and close-by rural areas to nearly 10 in isolated range and mountain districts. Thus, in contrast to current family planning efforts, mainly limited to the 11 metropolitan cities, the NCS integrated population-environment programme will focus on fragile ecological regions with high fertility rates, especially those areas where degradation has downstream impacts on land and water.

The NCS recognizes that a population of 200 million is now inevitable, barring catastrophe. It shows the way rapid growth can be moderated most effectively while maintaining a quality environment for all.

See Country Report on page 29.

Scientists unite

In an unprecedented initiative, the officers of The Royal Society in Britain and the US National Academy of Sciences have issued a joint statement calling attention to the critical connection between population growth and the degradation of the global environment.

The statement says that "if current predictions of population growth prove accurate and patterns of human activity on the planet remain unchanged, science and technology may not be able to prevent either irreversible degradation of the environment or continued poverty for much of the world."

It hopes that the statement will encourage dialogue at the Rio Earth Summit and announces that the Royal Swedish Academy of Sciences will host an international scientific conference early in 1993 to discuss what actions should be taken.

The statement says that surveys in the developing world have repeatedly revealed large amounts of unwanted childbearing: "By providing people with the means to control their own fertility, family planning programmes have major possibilities to reduce rates of population growth and hence to arrest environmental degradation."

Parks and people

The growth of population and the closer involvement of local people in the future management of national parks and protected areas were two central themes of the fourth world congress on that topic which took place in Caracas, Venezuela in February.

The theme was introduced at the opening session by Dr Martin Holdgate, Director-General of the World Conservation Union (IUCN), who said that for the first time in the history of the Earth, the dominant agent of change was a single species – our own.

Rapid population growth, escalating resource demand and the severe pressures of poverty meant, he said, that some encroachment on human settlement on what are now natural habitats was inevitable. The Mediterranean, the semi-arid regions, the dry tropics and the humid tropics were the zones facing the most severe combination of pressure. But it was in the tropics, with the highest biological diversity, that conservation and assistance to promote sustainable living must be concentrated.

In a final Caracas Declaration the conference, attended by over 1,500 conservationists, said that "natural wealth is being eroded at an unprecedented rate, because of the rapid growth in human numbers, the uneven and often excessive consumption of natural resources, mistaken and socially harmful styles of development, global pollution and defective economic regimes, so that the future of humanity is now threatened."

And among 14 recommendations it called on governments and others to "to recognize the significance of demographic change and its consequences for the survival of biological diversity and to take appropriate action to reduce this threat".

■ *A full report of the Congress and of the Workshop on Protected Areas and Demographic Change will be included in the next issue of* People & the Planet.

New video

Actor John Cleese stars in a new 20-minute video and educational pack entitled *People & the Planet*, to be shown at the Earth Summit. The video, aimed at teenagers, covers the issues dealt with in this publication and is sponsored by the British-based Margaret Pyke Trust. More details in our next issue. ■

Towards the Third Revolution

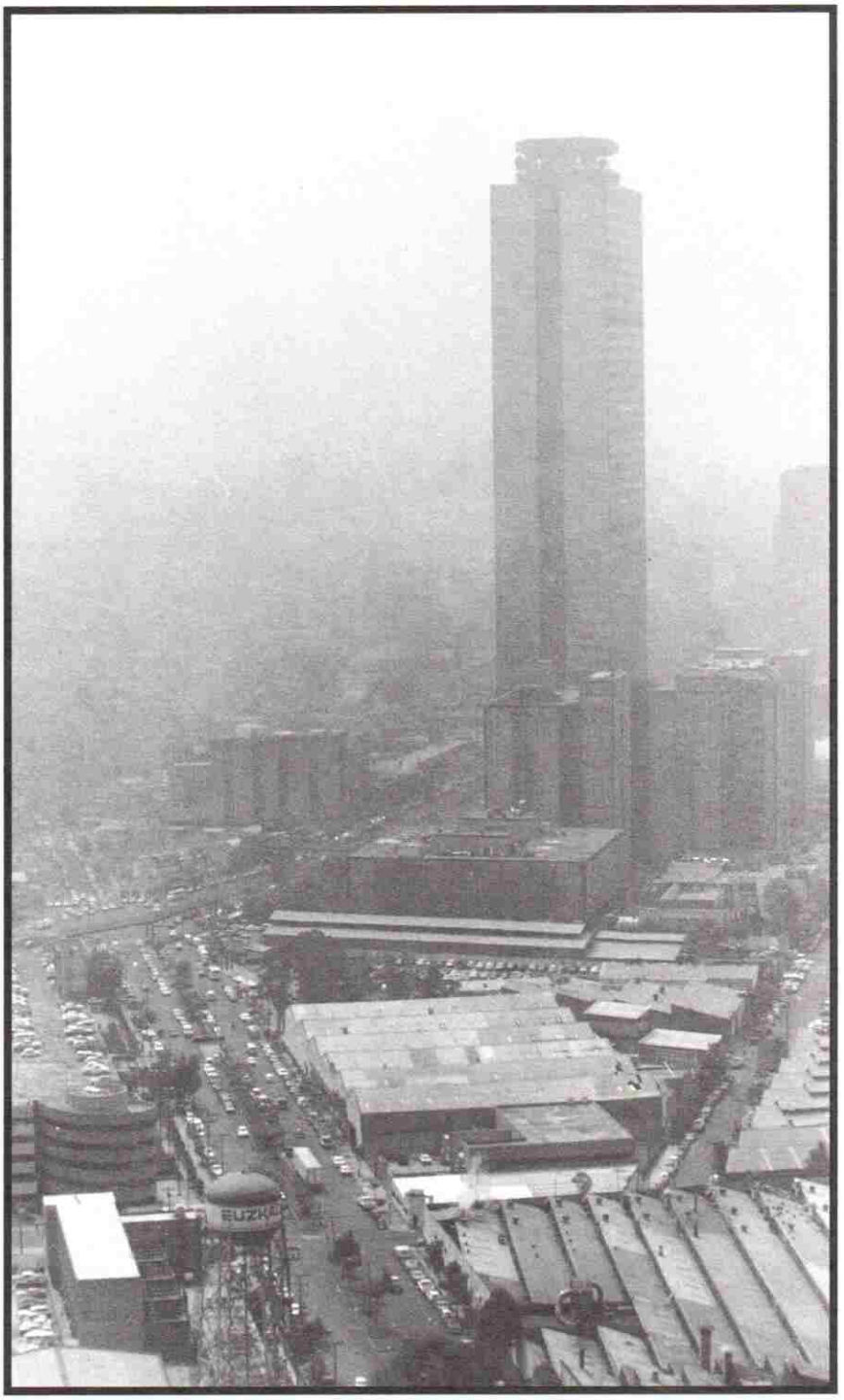
Paul Harrison's latest book, *The Third Revolution*, is said to synthesize the best from all sides of the population debate. British environmentalist Jonathon Porritt has said that if any book can break the deadlock, this is the one. Here *Paul Harrison* outlines the core of his argument. On pages 16–19 he summarizes his key factual findings.

The world has entered a phase of environmental crisis, which is mounting in scale and gravity. In the 1970s, we worried about spreading deserts, shrinking forests and fuelwood shortages. In the 1980s, the list grew longer: red tides of toxic algae, acid rain, the ozone hole, and threats of nuclear accidents and global warming.

All this came upon us in the brief space of no more than three decades. These same three decades saw human populations soar from three billion in 1960 to 5.5 billion today. At the same time the consumer revolution gathered pace and spread from America to Europe and Japan, then to the rest of East Asia, and to a growing middle class in other developing countries.

The conjunction of these three things is no coincidence: for the environmental crisis is the outcome of the population and consumption explosion. Technology is crucial too, for we are still using too many resources, and emitting too much pollution, for each unit we consume. Population, consumption and technology are the key direct agents in our impact on the environment.

The next two decades will see population and consumption increasing faster than ever before in history. And technology is not changing anywhere near fast enough to compensate. The global environmental crisis is only just beginning.



MARK EDWARDS/STILL PICTURES

Mexico City, where air pollution is often 100 times too high.

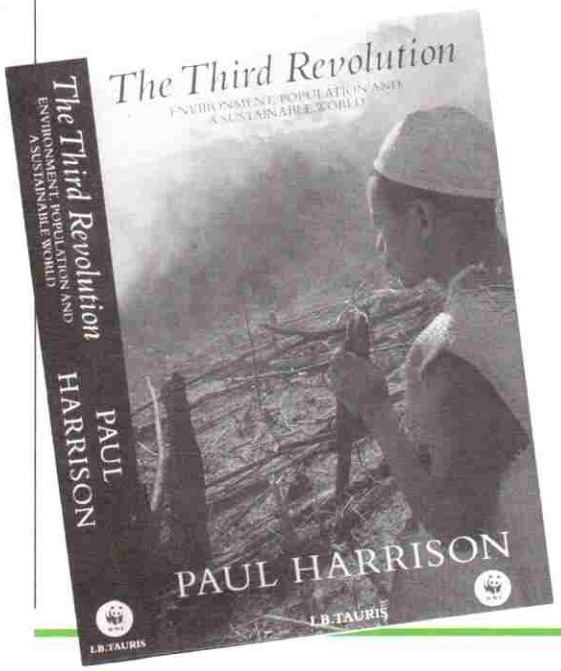
We can look to history for precedents as to how we might respond to it. For this is not the first environmental crisis that the human race has faced. Previous crises, too, were the result of growing populations and consumption demands pressing on the resource base. And they led to massive shifts in lifestyles and technologies.

Many archeologists now see the

Agricultural Revolution as the response to a prehistoric food crisis. For hundreds of thousands of years humans had survived by hunting and gathering. Then, from 12,000 years ago on, populations in the Near East began to exceed the sustainable supply of wild foods. As large mammals were hunted out, human diets had to shift to a broader spectrum of plants and game. Artificial planting of cereals was probably taken up only as a last resort, since it demanded much harder work, for a poorer, blander diet.

But it made further population growth possible – and farming methods had to change further, to feed the extra numbers. Hoes gave way to ploughs. Fallow periods were cut back, until farming became permanent. Manure from livestock had to be applied. When even higher yields were needed, chemicals were used. The agricultural revolution is a never-ending revolution, and it is still under way today.

The Industrial Revolution, too, came partly as a response to resource shortage. By the end of the 17th Century much of Western Europe had begun to suffer serious deficits in timber and fuelwood. Coal came in as a substitute. As demand rose, mines had to be deepened below water tables. Horse drawn pumps could no longer cope. This stimulus sparked the development of the steam engine.



Economists like Julian Simon and Ester Boserup claim that population growth is a boon rather than a bane. Humans adapted successfully to the problems that population growth created in the past. Is there any reason to think they will not adapt just as well in future?

The fact is that the present crisis is different. The first two revolutions were responses to resource crises, first with food, then with timber and energy.

We may face resource shortages in a few decades' time. But this third environmental crisis is the result not so much of what we use, as of what we waste. Not just what we throw away or pump out in gas or liquid form – but what we squander in fertile soil, trees, and species wiped out.

In the modern trading economy a pollution crisis is much harder to deal with than a resource crisis. When resources run short, prices rise, and we economize, or shift to substitutes. The market economy processes the signals fairly well.

But pollution is what individuals and companies do to people other than themselves, or to common property like forests, oceans or the air. That impact doesn't usually show up in prices. It only shows when people suffer and protest.

Only the political and legal systems can deal with these external impacts. The problem is that our institutions are not adapted to deal with them, especially at international level – where many of the problems of air and water pollution show up.

Our track record on dealing with environmental problems is poor. Generally they have to reach crisis proportions before we respond. It took the killer smog of 1952 to bring action on urban air pollution in Britain. Whales were hunted close to extinction before whaling was banned. CFCs had to tear a massive hole in the ozone layer before their phase-out was planned.

We seem to suffer from what I have called the Hamlet syndrome. In Shakespeare's play Hamlet knows from early on that he must kill his father's murderer Claudius. But before he makes up his mind to do so, six innocent lives have been lost, and Hamlet himself has only half an hour to live.

Can we learn to act to prevent disaster, *before* our hand is forced? Can we break the fatal Hamlet syndrome before it breaks us? How severe must the damage be before we act comprehensively?

The task of adaptation that lies ahead is enormous, both in scale and in the speed required. The third crisis will lead to a Third Revolution, in which we will be forced to shift our whole relationship with the environment onto a sustainable basis. Everything will have to change: our technologies, our consumption patterns, our institutions, even our reproductive behaviour.

The speed with which we react will determine how much irreparable damage is done before the destruction is halted. We will have to act decisively on our three direct factors: population, consumption and technology. And we must work, too, on everything that affects them, from free markets and democracy to poverty and inequality within and between nations.

Consumption is the least tractable. The world's 1.1 billion poor will have to increase their consumption to escape poverty. The middle three billion aspire to improve their lot further. The richest billion will not be easily induced to cut back the living standards they have grown used to. Governments that try to force them to do so will be risking their own electoral necks. The best hope here is that a global change in values will lead the affluent people to cut their consumption – or to shift to less damaging forms of consumption.

MARK EDWARDS/STILL PICTURES

Children and adults learn together in the school founded by Chico Mendes in the Brazilian Amazon.

We will have to shift to sustainable technologies, and sustainable ways of managing natural resources. But we can't put all our eggs in the technology basket and do nothing about the other problems. If consumption levels and population both double, which is quite possible, then technology would have to reduce environmental impact by 75 per cent *just to keep damage levels constant*, let alone to improve them.

Of all three direct agents the population factor is the most promising field of action. But though the situation is urgent, we must not be panicked into measures of 'population control,' or coercion, which may backfire.

If we are really serious about bringing population growth rates down fast, we have to look hard at the lessons of those countries that have succeeded in doing so. Countries like Thailand, where the number of children per woman fell from 6.1 in 1965-70 to only 2.3 in 1987 – as fast as the swiftest technological change.

Four factors have been crucial in these success stories. A high level of female education and literacy. A decent status for women, including rights to control and inherit property and to work outside the home for equal pay. A priority for mother and child health care, to bring down levels of infant mortality. And easy access to a wide and free choice of family planning methods, with good counselling and medical back-up.

Any one of these four measures is valuable in itself. Taken together they can work miracles. And the beauty of it is that all these measures are desirable in their own right. Indeed World Bank research has found that educating women produces one of the highest rates of economic benefit of any type of investment.

And their impact can be very significant. The UN medium population projection for the year 2050 is for 10 billion people. If we lag by *only 10 years* behind this projection in bringing fertility down – and to do so we would need only to continue the poor progress of the last decade – then we would be headed for a 2050 population of 12.5 billion. This difference is equal to the population of the whole world in 1950.

If, on the other hand, we give priority to a massive programme of human resource development, with special focus on women's education and on Africa and South Asia where almost three-fifths of future population growth will occur, then we might come close to the low projection, something like 8 billion people. The difference between high and low is 4.5 billion – the world population in 1981.

Helping women and children turns out to be one of the best ways to help save the world. ■

The Third Revolution *is published by I B Tauris, London (£16.95) and St Martin's Press, New York. The research was funded by SIDA/IUCN, UNFPA, the International Planned Parenthood Federation and the World Wide Fund for Nature. The book is also the subject of a film being made by Central Television (UK), which will be distributed internationally by the Television Trust for the Environment.*

People, poverty and the Earth Summit

On the eve of the Earth Summit, *Joseph Wheeler*, Director of Programme Integration for UNCED, explains how population is being included in the preparations for the Rio meeting in June. A former Chairman of OECD's Development Assistance Committee and a former Deputy Executive Director of UNEP, he writes here in his personal capacity.

People live and work on planet Earth where there developed a particular set of natural circumstances favourable to life, including human life. We humans have our niche, consisting of a happy combination of temperature and atmosphere along with availability of soil and water and other things. The room for manœuvre inside the limits of our niche is often referred to as our environmental space. We occupy our niche in symbiotic relationship with other species. People, among species, have come to dominate and our very success is causing problems. The rich among us are having a disproportionate impact – and in industrial countries in comparative terms most of us are rich.

We have discovered that human activities are pressing on the boundaries of our niche. We seem to be causing the temperature to rise faster than usual, through production of greenhouse gases. We have depleted the ozone layer with CFCs. We are reducing the diversity of species needed for renewing life-giving processes. We are also reducing the size of our forests, devegetating dry areas, causing soil loss and mishandling fresh water resources.

In short, we have discovered that we need to exercise balance in the way we use Earth resources. This involves controlling types of consumption, the amounts of some kinds of consumption and, since total consumption of environment-harming substances is a function of per capita rates and numbers of people, we need to be concerned about numbers of people as well.

In fact, we have to seek balanced approaches on each front. This is what UNCED is about: human beings managing things so as to achieve a reasonably good life for everybody without destroying the life-supporting environment.

Here I must underline that I included a value judgement when I mentioned a good life for everybody. We must be very clear that equity – the right to a decent life for all 5.5 billion of us – and the same right for all 10 billion people expected to populate Earth 50 years from now – is critical in the UNCED process. Nobody in 1992 argues that it would be right to project a future without assuming rights to at least a minimum use of environmental space for each person. Yet acting on that value judgement will present major challenges in the decades ahead.

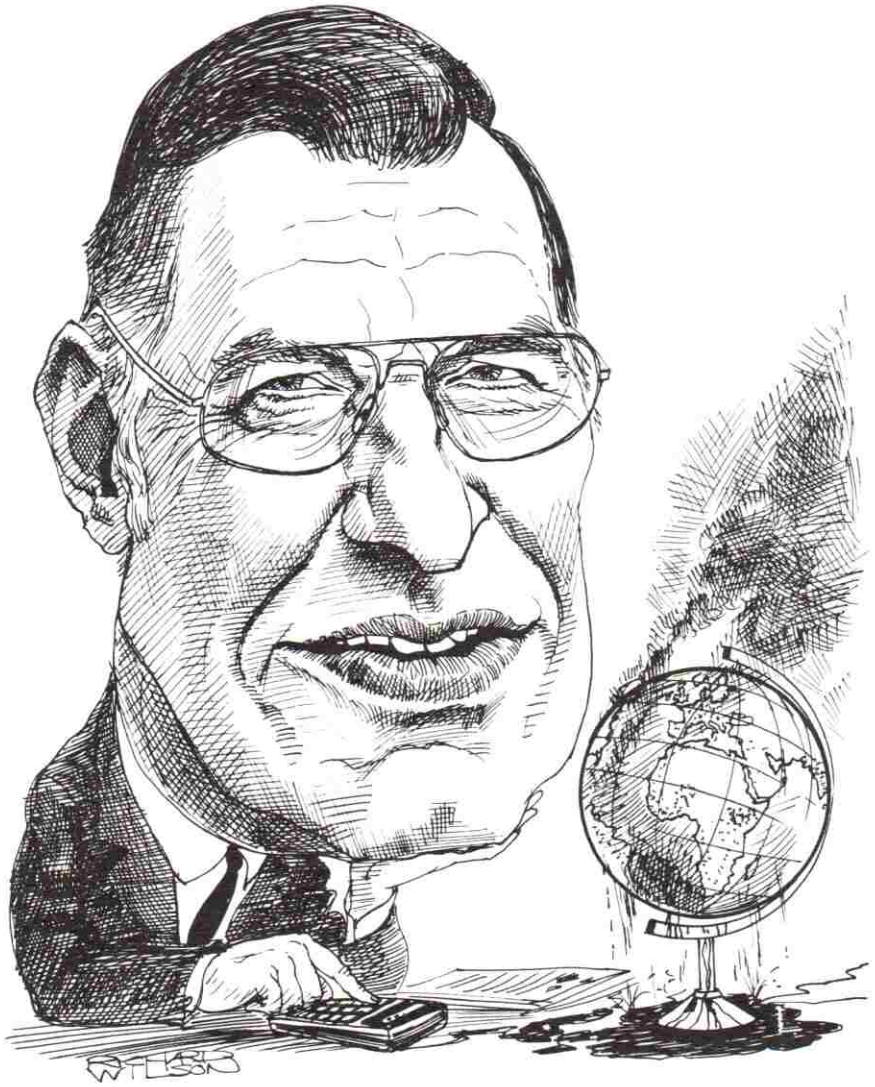
The output of the Earth Summit will be a declaration of broad policy. Then there will be Agenda 21 – about 115 action programmes contained within 40 chapters. In addition, we hope for two separate conventions on climate and biodiversity. There will be principles related to forestry. Then there will be agreements relative to finance and follow-up. A full platter, to say the least.

In the Secretariat, we have been working mostly on Agenda 21 – an action agenda for the 21st Century. Population relates to this agenda in a number of ways.

The chapter most directly related to population questions is Chapter 5 of the first section of Agenda 21 which covers Social and Economic Dimensions. Chapter 5 is devoted to "Demographic Dynamics and Sustainability". It contains three programme areas, with language agreed at the fourth and last Preparatory Committee in New York, which ended in April.

- The *first* addresses the links between demographic trends and sustainable development. This calls for more research on population, environment and development interactions.
- The *second* calls upon national governments to formulate integrated national policies for environment and development, taking into account demographic trends and factors. Governments are asked to assess the implications of population growth patterns, to build better information bases and to incorporate demographic features into relevant policies and plans. The programme calls for widespread knowledge in each society of population factors – what is called 'population literacy' – and a strengthening of the institutions in both the private and public sectors which deal with relevant issues.
- The *third* programme area calls upon countries to implement integrated development and environment programmes at the local level, taking into account demographic trends and factors. The language as negotiated in New York calls upon governments to implement measures to ensure that women and men have the right to decide freely and responsibly on the number and spacing of their children, to have access to the information, education and means to enable them to exercise this right in keeping with their freedom, dignity and values. Secretariat estimates suggest the need for an increase in population programme funding from today's estimated level of about US$4.5 billion to a year 2000 level of about US$9 billion – an average level of about US$7 billion annually during the 1993-2000 period. They call for an increase in donor support from today's level of less than US$1 billion to a level of over US$4 billion by 2000.

This last programme is premised on several important pieces of information as follows. Too early pregnancies, unsafe abortion and



RICHARD WILSON

too late pregnancies place a mother's life at risk resulting in between 100,000 and 200,000 unnecessary deaths every year, mostly in developing countries. Some 300 million couples today are not served by family planning networks. Over 20 per cent of women of reproductive age do not want to have more children.

These three programme areas in Chapter 5 deal directly with the population issue. However, among the rest of Agenda 21's 40 chapters there are many which deal either with the *results* of projected population growth or with factors *affecting rates* of future population growth, sometimes with both simultaneously. I will mention a few of the most important.

- *Combatting poverty:* This chapter calls for a major programme to put people to work in order to eliminate today's burden of a billion people living in poverty and to provide opportunities for another 4-5 billion people expected to be added to the world's population before the demographic transition is completed in mid-21st century. Completing the transition by mid-century is the 'successful' scenario. To cause this to happen, there is a need for a special effort on poverty reduction through increasing earning capacities and providing access to goods and services.
- We must recall that population stabilization in Europe and elsewhere has been accompanied by *successful development*. In a context of only partly successful development, people on average live longer. But they continue to have more than replacement levels of children. Halfway measures may be accompanied by reductions in number of children from 6-8 per family to perhaps 4 per family. But without education, jobs, availability of family planning and changed attitudes regarding the place of women in society, family size continues above the replacement level of 2.1 children per family.

Dealing effectively with poverty will speed up the demographic transition. Fewer children will make ending poverty easier. It will take a substantial extra effort to achieve an adequate pace of development to both eliminate poverty and bring population growth rates down to replacement levels over the next two decades. Yet this is what must be achieved to complete the demographic transition by mid-century.

- *Protecting human health:* Health is a poverty issue but we also deal with it in Agenda 21 as a separate sectoral issue. There are separate programmes proposed on urban health and on meeting basic health needs. The challenge, again, is to catch up with unmet needs while constantly expanding to cope with increased population levels. Today one and a half billion people lack access to primary health care. It is accepted that when child death rates come down, families have fewer children.
- *Education:* Agenda 21 would reaffirm earlier declarations calling for universal primary education. The goal of universal educational opportunity is especially difficult to achieve with today's backlog of children not going to school and with the size of tomorrow's school-age population cohorts. More than 100 million children of primary school age are not in school today. The most deprived group is girl children and education for them is particularly relevant to questions

affecting family health and attitudes about the number of children in a completed family.

■ *Human settlements:* Urbanization is an attribute of development and the developing world is rapidly urbanizing. Developing country cities are enlarged by 60 million new inhabitants annually. Shortly after the turn of the century, half of global population will live in cities. Demographic projections suggest a doubling of developing country urban population from 2 billion in year 2000 to 4 billion in 2025.

It is a dramatic thought that it will have taken all of time to accumulate human settlements facilities for 2 billion people in developing country cities and that those facilities will have to be doubled in only 25 years. Yet urbanization is not simply problems. Urbanization should also be seen as a set of opportunities. While some things become more difficult in an urban setting, most things are easier or cheaper. Also, urban areas are producing most of our wealth. So developing countries – indeed, all countries – should develop strategies to use the opportunities afforded by urbanization for enabling private sector job creation, providing education, providing clean water, and reaching populations with family health services.

But the scope of urbanization now going on makes this another area where we have to run to stand still. It will take an enormous extra effort to cope with developing country urbanization during this next half century when population continues to increase and urban populations increase even faster.

■ *Fragile ecosystems: forests, mountain and arid areas:* In each of these areas, the basic strategic goal is to take the pressure off what are usually very fragile ecosystems while searching for sustainable livelihoods for people living in them. Since the resource base is not as amenable to high productivity interventions as are high potential lands with their good soil and water conditions, a part of the strategy must be to draw people off to richer agricultural areas or to urban jobs.

■ *Agriculture:* World population is likely to double even under the successful population scenario and the hoped for rise in per capita income will significantly increase per capita demand for food. Taken together, these two factors mean that we need to at least triple food outputs over the next 50 years. We need to do this on the best agricultural lands. Much of the increased production of the past 50 years came with increased amounts of land brought under irrigation. Now we are running out of irrigable land. Also irrigation has environmental problems of its own. So our tripled production must come on land already heavily used, using improved soil and nutrient management systems, some of which are still to be invented. Careful balancing will be needed for both water and fertilizer.

Tripling food production will be a real challenge. The faster we achieve the world demographic transition the easier will be the task of achieving a strategy which uses high potential lands without exceeding their potential while pulling population away from fragile ecosystems now being destroyed by inappropriate use.

Note how urbanization, fragile ecosystem programmes and agricultural production strategies fit together. High-technology agriculture on high-potential lands is possible only in the context of an urbanization strategy where urban areas produce the efficient technologies needed by farmers and process and consume the farmer's surplus products. A successful strategy will draw people off the marginal mountain-sides and dry areas, permitting reforestation and regeneration of vegetal cover. There will be no easy road to success on this strategy. However, it is important to recall that this is roughly what has happened in today's industrial countries. Success for this strategy will come easier if demographic pressures can be modified.

■ *The Oceans:* One hitherto relatively neglected area has been the environmental health of our oceans and their productivity. Again, numbers of people and how they manage themselves are critical factors. Agenda 21 will highlight the issue of land-based sources of pollution. Most people live near the sea and the number will increase dramatically. So success in our efforts at controlling city sewage and waste generation and disposal and management of industrial wastes will be critical to protecting the sea for fish, for recreation and for its role in the climate process.

■ *Fresh water:* Finally, we face an insistently growing crisis over fresh water. The January International Conference on Water and the Environment in Dublin addressed these issues. Recall the need to triple agricultural production over the next 50 years, the fact that population will nearly double in this period, and that per capita use of fresh water is bound to increase in developing countries. Given the fact that there are already countless examples of fresh water over-use and contamination, water issues may well become among our most contentious in the years ahead. The relation to population is self-evident.

The conclusion of this discussion of several of the programmes covered by UNCED's Agenda 21 is that population growth and other demographic trends permeate the strategies. Inevitable population growth and changes in location and age composition dictate much of our agenda for the next several decades. Direct and indirect measures to complete the demographic transition will immensely improve the prospects of success in the global effort to achieve sustainable development for all the peoples of this world in the coming century. The Earth Summit in Rio in June is the place to achieve consensus on the main elements of this strategy. ■

Encouraging self-development

ALAIN MORVAN

Louise Lassonde, population adviser to UNCED, has made a big impact on the preparations for the coming Earth Summit. Here *John Rowley* tells her story and questions her about her views on population and the world we live in.

Born near Montreal, of French Canadian parents, Louise Lassonde, has impeccable academic credentials for her job at the UNCED secretariat in Geneva. But her motivation stems from many years spent working with people in remote parts of Latin America and in Africa.

Her early interest in and curiosity about people and their ways led her to a degree in anthropology and study of ancient cultures in Peru.

"The idea" she says "was to investigate the remarkable historical phenomenon of societies which spread across three different ecological zones: coast, sierra and *puna* (the Andean highlands). In practice we found few remnants of this old way of life. Indeed, one of the saddest experiences I have had is with Indian peoples whose culture has been so tragically destroyed."

But it did provide a chance to learn the local Quechua language as well as Spanish, before moving on to France and a second degree, this time in sociology. This led in turn to a growing interest in population matters, research in Morocco into migration and a PhD in demography.

Back in Montreal Dr Lassonde took up university teaching in development and demography, but was soon lured back to Africa as regional director for a Canadian NGO, with responsibility for Burundi, Rwanda and eastern Zaire.

Consultancy work for UNICEF and UNFPA followed, including studies into the lives of women and the ways in which they could generate income and improve their options for a better life. Three years ago, in 1989, she joined the UN Population Fund and was posted as country director to Togo and Benin, before being seconded to UNCED.

But it was her field experience which has made her impatient to see results. "Time is short" she says, "and we must face up to the fact that as individuals we are to some extent accountable for what is done or not done.

"The other facet of my experience is that it does not take much effort to change a lot. Improved management and information and good-will can achieve many, many things, not all of them requiring money. People everywhere have the desire and the will to do something to improve their lives and that of their families. They just need appropriate conditions and the possibility of doing things – to be freed from a discouraging atmosphere."

From her own experience Dr Lassonde recalls one cruel example of how lack of understanding can have tragic consequences. A man was brought to an African health centre, very ill with malaria. Unfortunately the doctor would not examine or treat him because he was of the wrong tribe. The man died. "The pill was there that would have saved him, but not the will."

Despite such incidents she strongly believes "people will develop themselves if they have some support in terms of health and education. We should not set the targets for others. They must decide what they want.

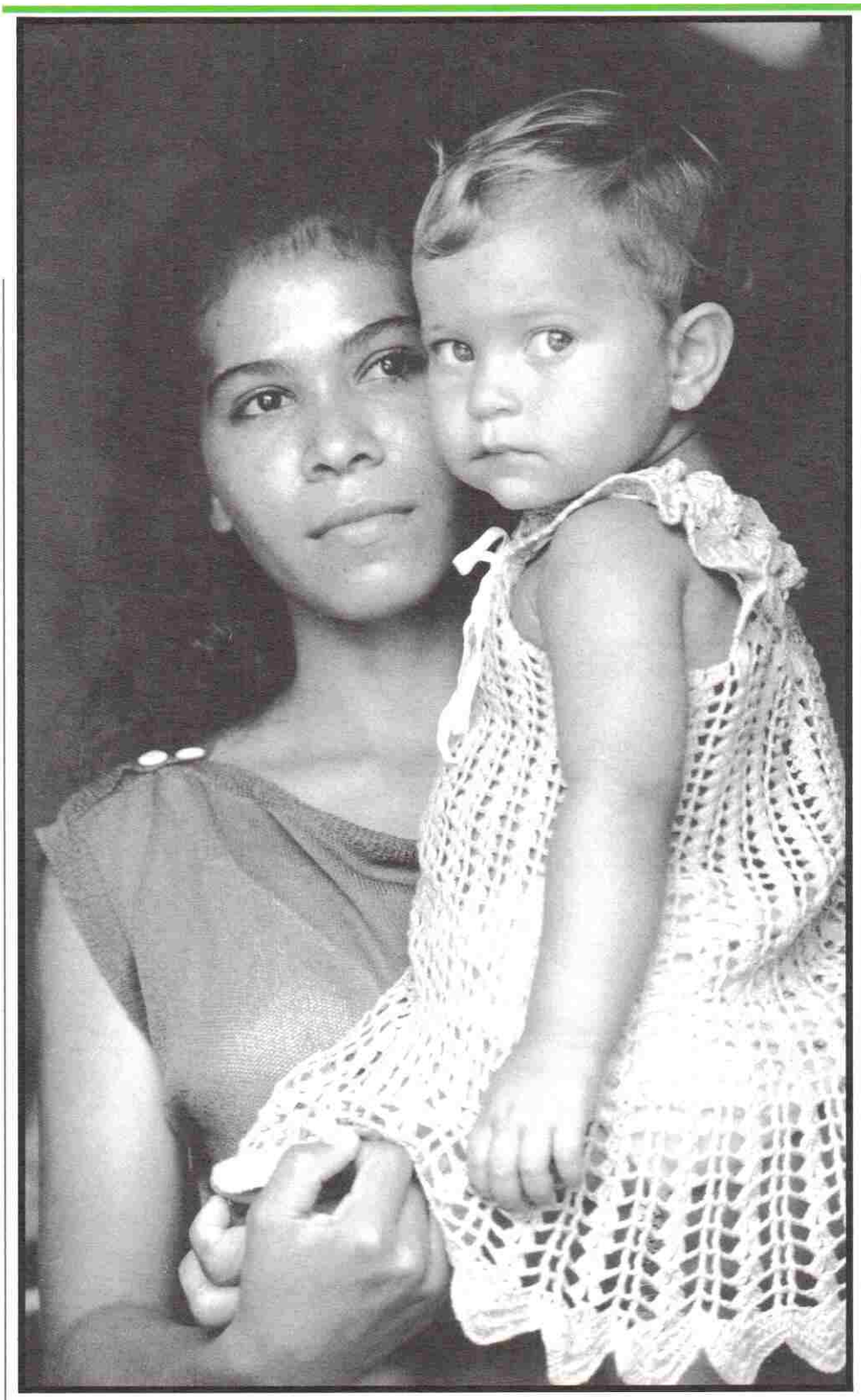
"From an anthropological point of view that is what is most interesting: allowing people to develop in a variety of cultures and with a variety of creativity."

Within the UNCED process, Louise Lassonde has seen this positive approach work its own magic. When she joined the secretariat in Geneva population issues were hardly visible in the preparatory documents. Only one, on poverty and environmental degradation, even mentioned the topic.

Working with colleagues she was able to strengthen this paper tremendously and to see that population took its place in various other documents.

On the basis of comments at the third preparatory meeting she helped to prepare a chapter of the draft Action Plan for the Earth Summit in Rio, known as Agenda 21, on demographic dynamics and sustainability and saw population integrated into 15 other chapters of the document dealing with specific issues such as forests, oceans and biodiversity.

Agenda 21 will be negotiated word by word, or in broad principles, at Rio, where the Earth Charter will also come up for debate. One of the major principles, suggested by Venezuela, for this charter is stabilization of world population. ■



Wife and daughter of Amazon slash-and-burn farmer. Some 20 per cent of the rainforest has already gone.

In an interview with *People & the Planet*, Louise Lassonde spelt out her own views on UNCED and the links between population and sustainable development:

Planet: **Do you now feel that population has come through as a substantive issue for UNCED?**

Lassonde: Yes, undoubtedly, population is now fully integrated in the agenda. There has been considerable interest in the analysis of the population and environmental linkages from the part of the delegations. There has also been quite significant political commitment from countries, in addition to their treatment of the topic in the national reports on the state of their environment. So far we have received about 70-80 national reports and 70 per cent of the countries mention population as a major problem area.

The Group of 77, or the developing countries on the whole, have made the point that more attention needs to be given to their economic development problems and that unless these are addressed they are less concerned with global environmental questions – and possibly global population questions. Is that the case?

It is true to say that they are principally concerned with their possibilities for economic development. You are right in saying that they are not especially concerned with global warming, for example. This is a secondary concern for them.

But the population problem is seen essentially as a national and local problem. And our concern has been to ask countries to assess the implication of their own national population dynamics for their own economy. This they have done.

I get the feeling that partly because of this debate about the environment population has once again come to the fore. Do you think this discussion of the environment has actually drawn attention to population as an issue?

I think it has widened the perspective in which we discuss population. In the past we had a tendency to discuss population only in regard to women, to fertility. Now we see the population in terms of population dynamics, in terms of all the population variables, that is mortality, migration, distribution, age structures of population. We see the problem as related to the link between man and biosphere, human activities, human numbers and other species and the life cycle of the biosphere. So I think that the perspective we have now is much more in tune with the major challenges of the time.

Population perspective is widening

When the developing countries draw attention to their problems, their urban problems, or their problems of rural poverty, are they making the link with rapid population growth?
Yes, they do establish a link between the vicious circle of poverty in rural areas and certain aspects of population dynamics and also of their population patterns and urbanization for example. From a political point of view and also from an analytical point of view they do not want to link population to poverty only, because poverty has other dimensions.

As a result of your involvement, you must have done a lot of thinking and come across a lot of analysis about the linkages between population and the environment which we know is a very complicated one. What conclusions have you come to about this relationship?
When we look at the major challenges of our time, I think we have to consider two sets of issues. The first one is population dynamics and development, and women are at the heart of this problem. So we have to consider the reproductive life of women, their economic opportunities and also their empowerment in terms of access to information, and of where women stand in the decision making process. On the other hand, we also have to look at the global relationship between the human species and the biosphere. And we have to reconcile the necessities of addressing both sets of issues. And what I found most interesting is that there is no contradiction at all between the activities and the programmes and the policies we have to implement to successfully address these two kinds of issues. I think the success of the proposals that will be presented at UNCED lies with the fact that each kind of programme reinforces the other. And we must also note that the criteria for success is not only the adequacy of the policy, but action. So we should think in terms of results and we should build in some mechanics to assess the results.

Can you give some examples of what you are talking about – in terms of the action that is needed, and the synergistic effect of that?
Let's take the case of a village that has high fertility and a soil erosion problem, deforestation and water shortage. We have to address at the same time the condition of women, her burden, and the improvement of the condition of the natural resources that she depends on for living. So by implementing an integrated approach that would increase the personal, social and environmental gains for a woman and her family I think we can at the same time improve her condition and improve the environment. So this is the kind of action.

Could you give examples of what those actions would be in that village?
From the point of view of the reproductive life of women, actions would certainly include more information and a better programme on reproductive health, improved social services, improved programmes – for example – on tree planting, improvements in the use of water, programmes related to environmental protection, and also improvements in the institutional conditions in which this is taking place.

Do you see these actions taking place as part of an integrated plan which incorporates all these things, or do you see various development sectors coming in to help with different aspects of the problem? How far should actions be actually integrated into a single plan?
We must be very careful with plans. Good planning at the government level is certainly needed. But as far as implementation is concerned I think we should encourage decentralization as far as possible, in order that the people who will act and benefit from these activities are themselves the decision makers. But each case requires a different solution.

You've talked about the rural situation, the developing country situation. What about the urban future, because we know that by 2025 some two-thirds of the world's population will be urban?
The urban problem is an even greater challenge in a way because cities have reached dimensions that have never been reached in human history and I don't think that we have the ready-made solutions to deal with such a large number of people. On the one hand urbanization is good. It is positive because it provides grounds for modernization and for improvement of social services as well. On the other hand urbanization has reached such a level in mega-cities that we do not know how to provide these services. So I think there have to be two types of solutions, one set of solutions lying with the overall population dynamics of the country and another lying with infrastructures and urban management itself. The two have to go together.

Which are the most important recommendations that you think will come out of the UNCED process in relation to population and the environment? Can you put your finger on two or three key concepts of policies that are really critical?
The first one is to recognize that population dynamics is one of the major driving forces of environmental change along with technology and the production/consumption process. The second one is the need to reconsider the planning approach and integrate population dynamics and its implications at every level of the planning mechanism. And the third one is the political will to implement the activities and programme which will be induced from these policies. ■

A consensus for action

A great and increasing number of governments and organizations have recognized population issues to be at the heart of sustainable development. Here, *Louise Lassonde*, Population Adviser to UNCED, reviews this growing consensus, through the official statements of multilateral agencies, NGOs, the scientific and business communities, and governments of industrialized and developing countries.

The first point of consensus on population and resources issues is on the need for an integrated approach. It is now widely recognized that these issues must be dealt with together, and that population dynamics as a whole, not only fertility, must be taken into consideration.

Distinct relationships between population dynamics and resources appear at the global, national and local level and these must be addressed within a new framework of analysis. This should be flexible enough to capture both complexity and specific situational variations.

A radical change in approach, policy, and decision-making processes is needed. And in order to translate this new vision into action, improvements must take place in our scientific understanding of the issues; political commitment must be strengthened and financial means significantly increased. Support from political, intellectual and moral authorities is indispensable, and their awareness of problems and possible outcomes must be greatly increased.

Second, there is a growing sense of urgency. Because of the long-term nature of population dynamics, it is felt imperative to act immediately adopting a precautionary approach, just as for the global warming.

Third, setting targets is a policy requirement. At the world level, stabilization of the population is more and more on the agenda, along with the stabilization of consumption and production of wastes. At the country level, population targets must be consistent with national development goals and, at the same time, ensure a balanced distribution between population and resources.

Fourth, a scientific agenda must be set. The central question is: what are the biophysical limits to economic and population growth, and how should we deal with uncertainty about these limits? Methodologies, data and tools must be reviewed and adapted to a new perspective of environmental change in which socio-economic factors and population dynamics are interwoven. More case studies should be carried out.

Fifth, women's role and status are at the centre of all strategies on population and environment. Programmes and projects should be designed to link social, economic and environmental gains for women and their families. Empowerment, education, training, legal rights including reproductive rights, participation in decision-making and job opportunities are all essential components of programmes of action.

Finally, there is also a general agreement on the two major ingredients of efficient population/environment activities: A participatory approach allowing individuals and communities to participate fully in decision making, and the building of a national capacity to assess the local situation, design and implement appropriate policies. ■

We give below quotations from declarations at international meetings and from recent publications on various population related issues.

Integrated approach

"International development assistance NGOs stand with the environmental and population NGOs in supporting an emerging consensus that economic and social development and environmental concerns are not antagonistic but are mutually reinforcing." *Policy Statement and Action Plan for International Development, Environment and Population NGOs, International Council of Voluntary Agencies, 1989.*

"The issues of population, natural resources and development have to be considered together . . . No discussion on natural resources and development will be complete without simultaneous discussion on population issues." *Statement of the International Conference on Population, Resources and Environment organized by The Royal Swedish Academy of Sciences and the Swedish Council for Planning and Co-ordination of Research, Friiberg, October 1991.*

"They (the participants) share a common concern that demographic pressure and mass poverty may endanger long-term sustainability." *Final Declaration of the Second World Industry Conference on Environmental Management, Rotterdam, April 1991.*

"Poverty, human health, population pressure and environmental degradation are closely interrelated . . . (We) commit ourselves to an integrated approach . . (and) . . . urge countries to adopt effective and sound population policies and accompanying measures for that purpose." *Ministerial Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific, Bangkok, October 1990.*

Act immediately

"In the long run the problem of overpopulation of the countries of the South can be fully resolved only through their development. But action to contain the rise of population cannot be postponed. The present trends, if

not moderated, have frightening implications for the ability of the South to meet the twin challenges of development and environmental security in the 21st century." *Report of the South Commission, 1990.*

Stabilize world population

"Mankind has many challenges: to obtain a lasting peace between nations; to preserve the quality of the environment; to advance the economic and social progress of the less developed nations; and to stabilize population growth." *Statement on Population Stabilization by World Leaders, 1989.*

"Population stabilization is essential, and men and women must accept their shared responsibility for achieving it. Goals must be set for the stabilization of the world population at a sustainable level." *'Caring for the Earth', IUCN, 1991.*

Women's role and status

"Provide education, increase economic opportunities, recognize their role in the care and management of the environment, review laws that have an impact on family size, ensure that health and nutrition programmes cater for special needs of mothers, give women access to the means of controlling their own fertility and the size of their families, institute reforms to give women a full voice in political, bureaucratic and economic decision-making and provide universal suffrage." *'Caring for the Earth', IUCN, 1991.*

Science agenda

"The scientific agenda must look towards more complex, systemic models where the effects of population pressures can be analysed in its relationships with other factors." *'Primary factors affecting population and natural resource use', L. Arizpe, R. Costanza, W. Lutz, ASCEND 21 Agenda, Vienna November 1991.*

"Affirm the important role of science in human health and population planning". *Ministerial Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific, Bangkok, October 1990.*

"Identify priority environmental problems, zones and population groups most vulnerable to environmental degradation." *UNFPA expert group meeting, New York, March 1991.*

Policies

"Urge countries to adopt effective and sound population policies and accompanying measures for that purpose." *Ministerial Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific, Bangkok, October 1990.*

"We consider that sustainable development strategies must include policies aimed at regulating the growth, distribution and movement of the population, since these factors are closely linked to the environment." *Inter-Parliamentary Meeting on Socio-economic Development and Environmental Protection, Caracas, June 1991.*

"The long-term challenge for environmental, population and development groups is to work together to bring about governmental policies that reflect global interdependence, perhaps the central reality of our time, and the crucially important connections between the national interest of industrialized countries, and poverty, resource management, and population pressures in the Third World." *Policy Statement and Action Plan for International Development, Environment and Population NGOs, International Council of Voluntary Agencies, 1989.*

"Integrate resources consumption and population issues in national development policies and planning." *'Caring for the Earth', IUCN, 1991.*

Increase awareness

"There is a growing recognition of the seriousness of the population issues among the countries and cultures of the world. Governments are in fact taking up these difficult issues in their development strategies more explicitly. People from different religions and cultures in the world are discussing the problems and their solutions in more common terms. It is however clear that the issue has to be faced much more directly if we are to achieve the targets of sustainability. We propose that national and cultural leaders mobilize the political commitment and the technical means for making a breakthrough in limiting population growth." *Stockholm Initiative on Global Security and Governance, 1991.*

"Create greater awareness of global population goals and policies among parliamentarians and encourage greater support for these." *Interparliamentary Conference on the Global Environment, Washington, May 1991.*

"Population, development, and environment groups must invest more time and effort in cultivating an awareness among the media." *Policy Statement and Action Plan for International Development, Environment and Population NGOs, ICVA, 1989.*

Increase funding for population activities

"Dedicate a higher percentage of foreign assistance funding to international family planning and encourage funding for population programmes by multilateral development banks." *Interparliamentary Conference on the Global Environment, May 1991.*

"Adopt a target of 4 per cent of overseas development assistance for population activities, compared to a current percentage of around 1.2 per cent." *1991 Report, OECD.* ■

Major findings from Paul Harrison's new study into population and the environment.

Coping with consumers in tomorrow's world

The population debate has been bedevilled by extreme positions. Population is the world's number one environmental problem, say the Malthusians. No, it's lack of free markets and private property, say the right. Wrong again: it's inequality, say the left. Not at all, say others: it's technology.

The reason the debate has gone on for so long is that there is good evidence to back up all these positions. All these factors *are* key players. Where each school goes wrong is when they claim that their own pet anxiety is the key to everything.

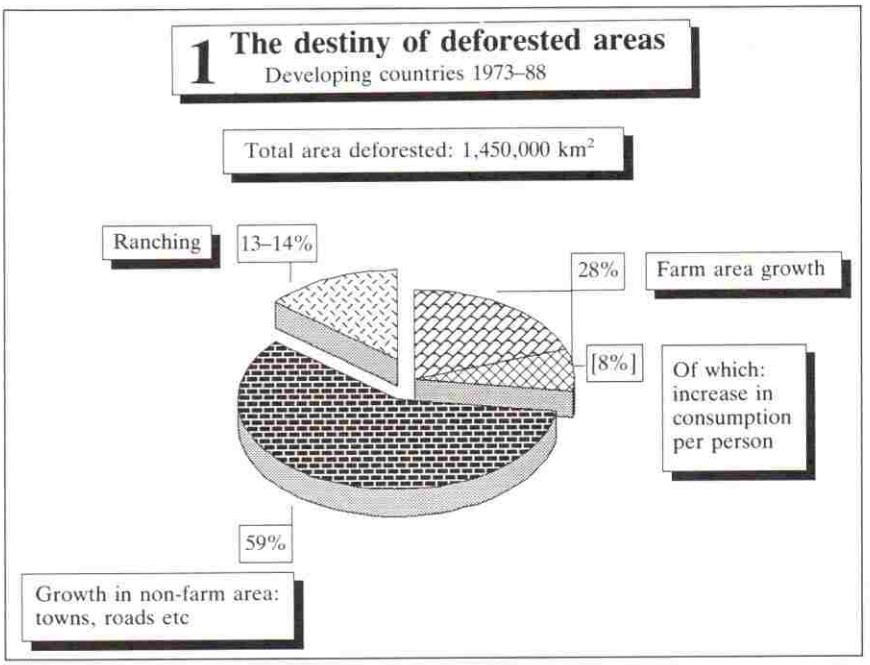
To move forward, we have to start out by recognizing that human interaction with the environment is a system. Systems have many elements, and the elements interact. We can never pick out one or two factors and claim they are the 'ultimate causes', while all the rest are secondary.

Inequality, for example, affects population growth, since the poor tend to have more children. But population growth can also affect inequality, by fragmenting farm holdings and pushing wages down.

Within this system, we can think of three key factors – population, consumption and technology – as the *direct* determinants of our impact. Other factors, though equally decisive, work indirectly through these.

The environment is where we live, the source of our resources, and the sink for our wastes. So there are in three main ways in which we affect it:

- We occupy space, for farms, roads, houses and so on. This reduces the space available for other species.
- We consume resources, and in many cases deplete them.
- We emit wastes, solid, liquid and gaseous, which damage other species and sometimes ourselves.



Space: farms, factories and forests

Our occupation of space is the prime cause of deforestation, loss of wildlife habitat, and loss of species.

Logging, of course, thins forests and reduces biodiversity. But logged forests regrow. Complete deforestation happens only if the land is converted to other uses.

Between 1973 and 1988, FAO land use figures show that a total of some 1,450,000 km^2 of forests in developing countries ceased to be forest land.

The main winner was non-agricultural land, for roads, factories, houses and so on. This grew by 856,000 km^2, or 59 per cent of deforestation, over this period (see Chart 1). Non-farm land needs are driven by population growth – FAO surveys suggest that each extra person needs an average 0.06 hectares, though there are wide variations.

Much of this land is taken from prime agricultural land. But farmland didn't shrink. It expanded, by 487,000 km^2, of which perhaps 400,000 km^2 came from former forested areas.

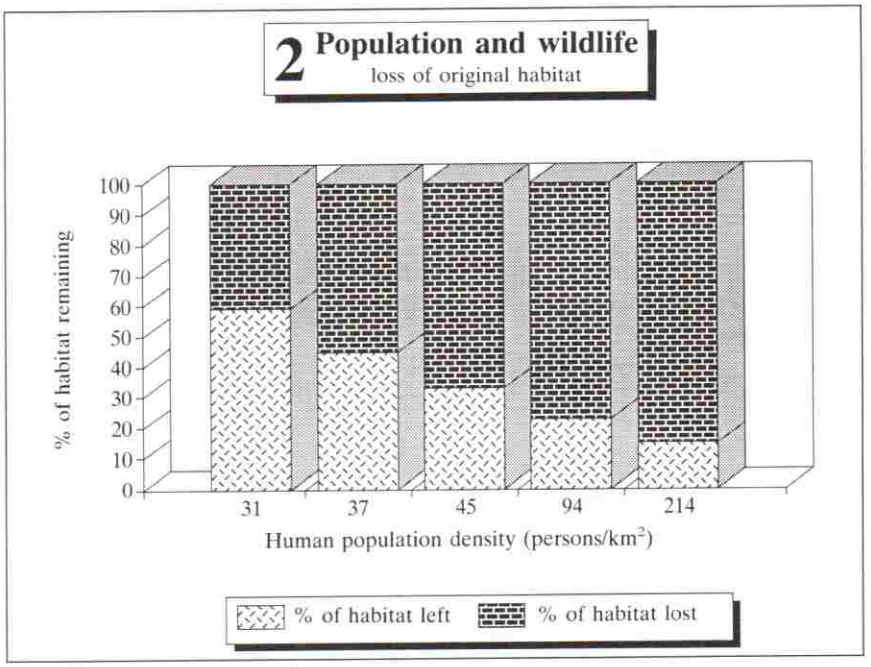
Almost three quarters of this, or around 288,000 km^2, was due purely to population growth. This amounts to another 20 per cent of deforestation. The rest was due to higher consumption of agricultural products (see box for details). Technology change played no part in the expansion. Indeed it tended to slow it down, since chemical fertilizers enabled the same area to produce more.

Ranching in the rainforest accounts for only a minor share of deforestation. Pastureland increased,across the Third World, by only 103,000 km^2. However, it did not expand at all in Asia, and in Africa it shrank by 58,000 km^2. Only in Latin America did pastureland spread into forests, by perhaps 200,000 km^2. Most of the beef produced in Latin America is consumed in Latin America. In 1989 the region exported, net, only 0.8 million head of cattle and 100,000 tonnes of meat, out of a total herd of 314 million.

Altogether, then, population growth was responsible for 79 per cent of deforestation in developing countries. Consumption growth accounted for 7 per cent. Rainforest ranching in Latin America destroyed the remaining 13-14 per cent. These figures are of course

only approximations: but they give a good idea of the relative impact.

There are close links between population growth and loss of wildlife habitat. Out of 50 countries studied by the International Union for the Conservation of Nature, I found a good correlation ($r=0.49$, $p<.001$) between population density and the share of original wildlife habitat that was lost. The 10 most densely populated countries – with 214 people per km^2 – had lost 85 per cent of their wildlife habitat. The least dense, with only 31 people per km^2 – had lost only 41 per cent (see Chart 2).



Resource use: an unprecedented explosion

Our use of resources has traditionally been the focus of the population debate.

In popular thinking resources divide into renewables, which renew themselves and therefore in theory won't run out, and non-renewables, which get used up and could run out.

In practice renewables have suffered most. Once pushed below a certain threshold, they can no longer renew themselves. They become, in practice, non-renewable.

Fertile soil, for example, can be lost in a few decades in sensitive areas. It would be restored within a few centuries or millennia: but no-one can wait that long. Biodiversity, once lost, is lost forever.

We have been able to increase the produce of the land by farming it. But so far we have not learned to farm the sea. The FAO has estimated the total sustainable yield of the ocean's fisheries at roughly 100 million tonnes. The total catch in 1988 was 85 million tonnes – not including some 24 million tonnes of artisanal fisheries. *Thus the overall sustainable yield of the world's oceans was probably already passed in 1988.* Once this ceiling is passed, depletion and declining catches are inevitable.

Surprisingly, it is non-renewable resources that have caused fewest problems so far. Indeed they have given the critics of Malthus their strongest ammunition.

Mineral reserves have been a magic mountain. The more we have used them, the more they have increased. In the three decades from 1950, world aluminium consumption would have almost exhausted the 1950 reserves. Yet reserves in 1980 were 3.7 times bigger. Over the same period the starting reserves of lead were used up twice over – leaving reserves more than three times bigger at the end.

This miracle has been worked by wider exploration, better technologies, and more efficient use of resources. Many economists believe that we can go on like this indefinitely. And even if one mineral or energy source runs out entirely, there will always be substitutes.

The problem is that our past experience in this area relates mostly to periods when the human race numbered only two, three or four billion, and when consumption levels were much lower than today.

There is no precedent for the combined population and consumption explosion that lies ahead. Imagine a world of 11.5 billion people – the medium United Nations projection – consuming resources at present-day US levels.

If this were to come about, then the 1988 world reserves of aluminium would be consumed in only 18 years instead of 224. Copper reserves would disappear in four years instead of 41. Today's oil reserves would run out not in 41 years but in four. Natural gas would be burned up in less than one year instead of 23. Even our current 374 years of coal reserves would be eaten up in 44 years.

It is hard to believe that adjustment mechanisms could cope with such a rate of consumption. The globe would be laid waste to mine resources. One energy source comparable in size to the world's oil reserves today would have to be developed every four years.

Of course, such a scenario is so outlandish that it could never come about: we would be forced to rein back consumption, or population, or both. But it does illustrate that a world of 11.5 billion people could not hope to live at affluent Western levels using anything like today's technologies.

Pollution: new limits to growth

The most pressing question today is not the availability of energy and minerals – there are enough for the next few decades at least – but the output of waste after using them. We will reach the limits of the earth's capacity to absorb our wastes long before we reach the end of its ability to provide resources. Before we run out of minerals, we may have to impose ceilings on their use.

Population plays an important part in waste output. If we take a snapshot of any particular point in time, the waste produced is the result of population, times consumption per person, times wastes produced per unit of consumption.

The calculus here is terrifying (see Chart 4). Even the average person in a developing country produces, in a lifetime, 149 times their own bodyweight in municipal and industrial waste. The typical European leaves behind a monument 971 times their bodyweight, while a North American heaps up a mausoleum almost 4,000 times heavier than themselves. If other wastes, from mining, building, dredging and sewage were included, the Western totals would more than quadruple.

We can do similar sums for gaseous wastes. Over a lifetime, at today's rates, the average European will emit a balloon of carbon dioxide in which the carbon alone will be two and a half thousand times their body weight. North Americans' balloons will be six thousand times their body weight. Even people in developing countries will emit 350 times their weight in carbon.

We can also work out the effect of population growth on the *increase* in pollutants (for methods see box opposite). In the case of fertilizer, a prime source of water pollution, the population share is low – 21-22 per cent. Technology change – increases in the amount of fertilizer used for each unit of output – accounts for 61-70 per cent.

Working out the population contribution

We can understand the links between population and environment, and measure them, with the formula: Impact = Population x consumption per person x impact per unit of consumption. **The last item is determined by technology.**

Impact can mean the amount of space we take up, the resources we use, or the pollution and waste we emit.

Barry Commoner applied a version of this formula to pollution in the United States between 1949 and 1968. He found that the amount of nitrogen fertilizer used per tonne of crops (the technology factor) increased by 8.9 per cent a year. Population grew by only 1.55 per cent, and food consumption per person by a mere 0.55 per cent.

Now we can take each of these figures to show the change that would have occurred in the amount of fertilizer used, if the other two factors had been held constant. To assign responsibility between them, we can add them up and score each one out of 100 per cent.

So we can say that population growth accounted for only 14 per cent of the combined increase, and consumption for only 5 per cent. The change in technology was responsible for 81 per cent of the impact. In other cases Commoner looked at, from returnable beer bottles to lead in petrol, population growth accounted for only 10-21 per cent of the changes.

In developing countries Commoner looked at pollution from fertilizers, cars and commercial electricity, and got slightly higher results. Population growth explained 25 to 31 per cent of the upward pressure.

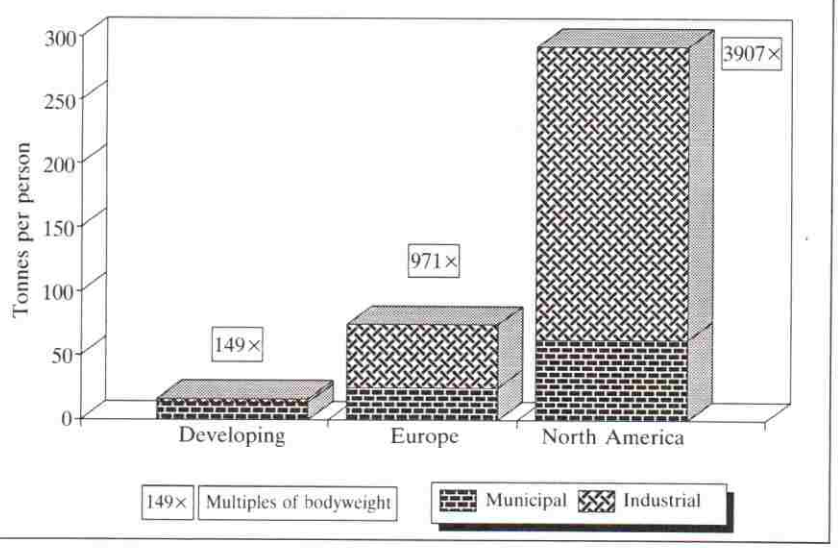
In most cases that Commoner examined, the population factor was stronger than consumption increase. But technology was the dominant factor. He concluded that environmental quality was largely governed by the nature of the technologies of production.

However, his results were heavily influenced by his choice of examples. They are all cases of rapid technological change.

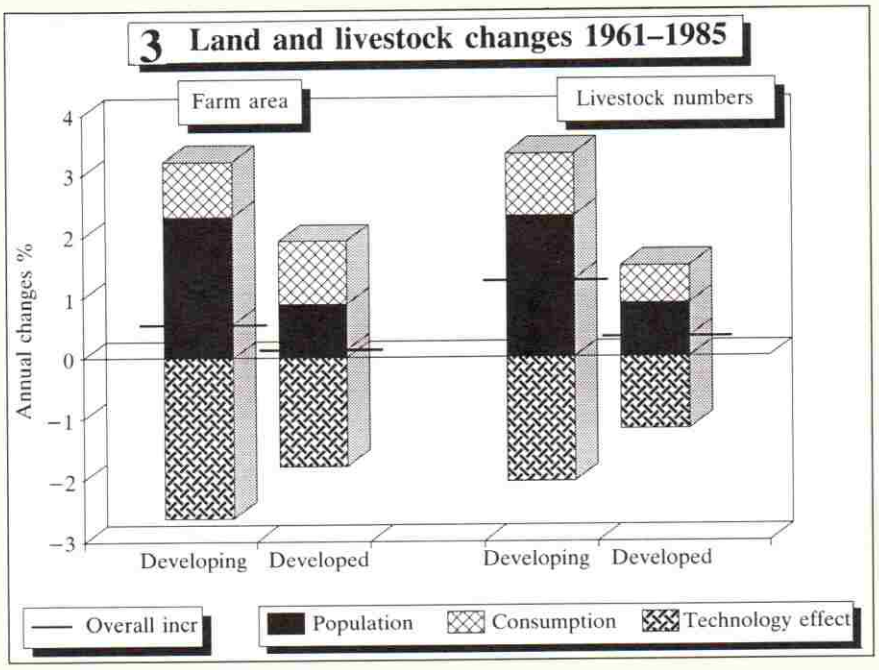
I used the same approach to look at more basic matters: the increase in arable land, and in numbers of livestock (see Chart 3). Both have strong environmental impacts. The first cuts wildlife habitat, the second boosts erosion and emissions of the greenhouse gas, methane.

Take the arable land increase. Between 1961 and 1985 population in developing countries grew by 2.3 per cent a year. Consumption – measured by agricultural production per person – increased by 0.9 per cent a year. In this case, technology was a downward pressure *reducing* environmental impact. The amount of land needed to produce each unit of consumption fell by 2.6 per cent a year, thanks to rising yields.

4 Monuments in solid waste
Lifetime output



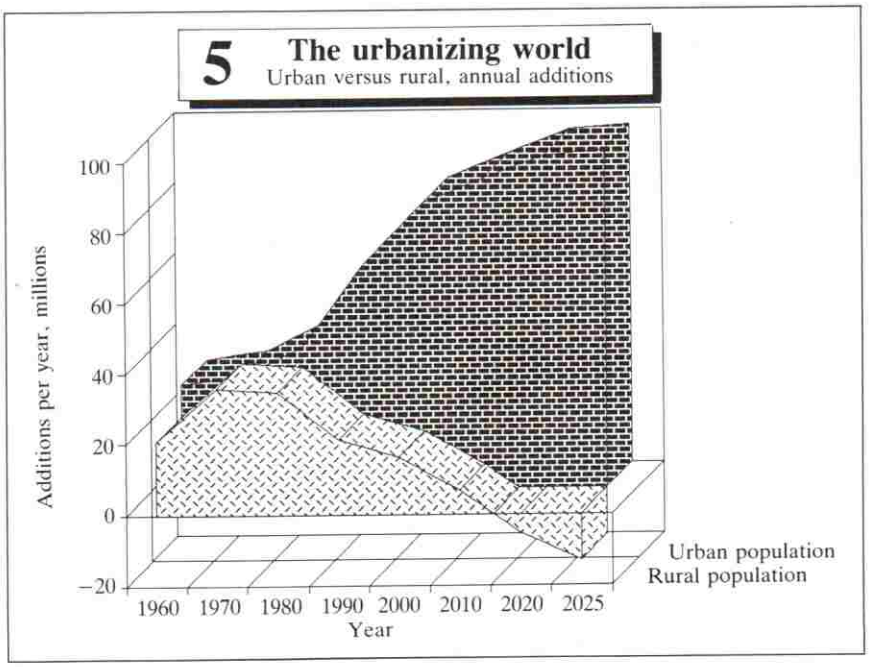
But this does not dispose of the population factor, since increases in population and consumption are the main reason for this technology change. Chemical fertilizer is used as a substitute for land, where land



If we score the two positive factors out of 100 per cent, then population accounts for 72 per cent of the increase in farm area, and consumption for 28 per cent. In developing countries, population growth accounted for a much lower share, 46 per cent.

Over this same period consumption of milk and meat rose by 1 per cent a year in developing countries. The number of livestock needed to produce each unit dropped by 2 per cent a year – due to healthier, heavier animals. Population growth, once again, was 2.3 per cent. So population growth accounted for 69 per cent of the increase in livestock numbers, and increased consumption per person for 31 per cent. Even in developed countries 59 per cent of the increase in livestock numbers was due to population growth. In both regions technology, again, was a downward pressure.

Overall, results for the population share in environmental impact vary widely. The share is low in the case of a rapid technological change such as the rise in chlorofluorocarbons. In case of basics like arable expansion, it is high. ■



expansion has been slowing down.

In the case of air pollutants, the population contribution varies widely. In the OECD it averaged only 25 per cent between 1970 and 1988. The situation with carbon dioxide varies widely from country to country. The population share of the upward pressures between 1980 and 1988 was 62 per cent for Africa and 61 per cent for Brazil, where economic growth was slow or negative. In China, which enjoyed very fast economic growth in the 1980s, the population share was only 13 per cent. In the case of China and the USA, there were considerable improvements in energy efficiency, which reduced CO_2 output per unit of consumption.

A clouded future

Population growth will have powerful impacts on the environment for the next three decades, and probably for much longer.

The land requirements are enormous. On the medium projection an extra 3.6 million km^2 will be needed for non-farm uses alone. Assuming that we can make do with a global average level of 0.2 hectares each for all purposes, we would have to swallow up almost 12 million extra hectares of wildlife habitat. Developed countries today enjoy 0.55 hectares of arable land per person.

The projected loss is nearly double the total area of protected natural areas in the world today. It would also mean expansion of farmland into more and more marginal semi-arid, mountainous and rainforest areas where yields would be lower and risks of degradation higher.

Urbanization is another major source of concern. It may help to relieve pressure on forests. But urban cultures use more energy than rural, especially fossil fuels. They also emit more wastes of every kind. On United Nations projections, no less than 97 per cent of population growth between now and the year 2025 will be in urban areas (see Chart 5). ■

The above is extracted from Paul Harrison's The Third Revolution, *I. B. Tauris, London, and St Martin's Press, New York, where sources and methods are detailed.*

Pressure and poverty in Bihar

by Bishakha Datta

There is a frenzied scramble as the train pulls into Gautamdhara, a tiny hillstop in the east Indian state of Bihar. The station is too small to merit a platform. About 40 men, women and children are stationed along the railtracks. The desperation of eking out a living is stamped on every face, every torn loincloth, every bundle of firewood lying trussed on each waiting head. Only the babies, sagging from makeshift perches on their mothers' backs, seem beyond it.

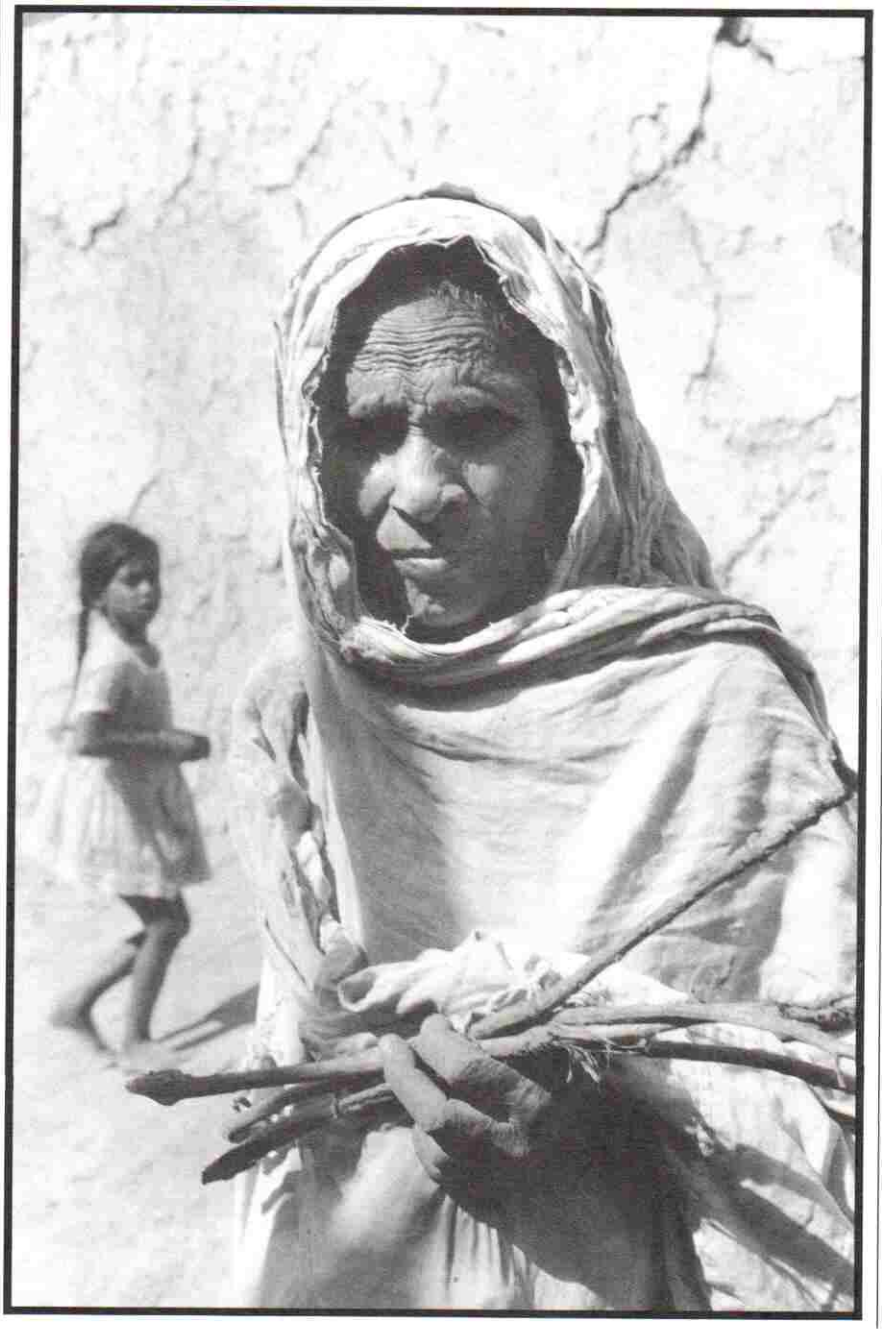
A lone woman reaches the tracks too late. "Open the door," she shrieks, clutching her firewood bundle. The train doesn't hear the desperate edge in her voice. Inside the compartment, men, women and children jostle for space for their bundles. Each bundle will sell for Rs 12 to Rs 25 ($0.5-$1) in the town of Ranchi. "Do you grow crops?" I ask one of them. "Yes, yes," he says. "But what can I do? There are many people in the family."

In the end, it all comes down to the number of mouths to be fed. Most families in the rural belt surrounding Ranchi contain five to 10 people. This is largely the norm in the whole state of Bihar, which with 86.3 million people, is India's second most-populated state.

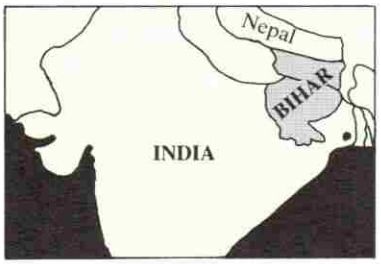
Bihar's rural population continues to grow faster than most of India's rural population. In 1989, Bihar's rural birth rate of 35.1 outpaced the Indian rural birth rate of 32. The pressure this exerts on land is evident from another set of figures: while 267 persons occupy one square kilometre of land in India today, 497 people crowd each square kilometre in Bihar, according to provisional data from the 1991 census.

If the land is groaning under the burden of so many people, the pressure of insufficient land is driving people towards hunger. Land – which provides food and fuel – is the main resource of the poor, but there simply isn't enough of it to go around. This can be seen in villages like Gerebir, which form part of the rural belt around Ranchi. Gerebir, which lies on the banks of the river Suvarnarekha, contains about 200 families, many of whom farm less than an acre of land. "The village is very congested," says agricultural development worker Ganesh Chaturvedi. "Three or four families live in one house."

Despite the congestion, total landlessness is uncommon in Gerebir and the villages around it; only 3 to 5 per cent of families are totally landless. Equally uncommon are big landholdings; a few families live comfortably off landholdings that



MARK EDWARDS/IPPF



Below left: *In villages like Gerebir there is now a real firewood crisis.*

are more than 10 acres.

Puram Ram Manjhi is among them. Manjhi wards off the winter sun in his brown woollen cap and looks at potatoes being dug out of a patch of the 15 acres of farmland he owns. "This year, there are more crops than last year," he says. Most years, there are enough crops for Manjhi's family of three.

But families like Manjhi's are more the exceptions that prove the rule. Parshuram is one of those who tries to provide for his family of six from his one-acre landholding. It's clearly an uphill task for the farmer. "We have nothing at home," says Parshuram, as he plants a row of onions in his tiny plot. "To continue to eat, we will have to sell these onions or something."

The pressures on people like Parshuram are intensified by many factors outside their control. For instance, the farm is located on less productive soil. Unlike Puran Manjhi, whose 15 acres are spread over fertile lowlands called *bahal* and less productive *tan* lands, Parshuram's entire holding is situated on less productive *tan*. This has a very real impact on Parshuram's life: lower crop yields means less food.

Other factors conspire to keep people like Parshuram poor. Although there is water in the river Suvarnarekha, there was no way to pump out the water until two years back, when a non-governmental organization called Pradan helped villagers set up lift irrigation units.

Today Pradan, which is partly funded by Oxfam India, has helped farmers set up lift irrigation schemes in 40 villages in the Gerebir region. Each unit waters 30 to 40 acres; the NGO locates units where small, marginal farmers, tribals and scheduled-caste farmers benefit most. "We have moved towards villages which are more tribal and poor," explains team leader Subodh Gupta.

But two years back, only a handful like Puran Manjhi could afford their own pumpsets to lift water from the river. Most, like Parshuram, were totally dependent on the rains. "If there was no rain, there was no rice," says Parshuram, frowning above his torn vest. Every third year, the rains failed and drought set in.

Such factors force small farmers like Parshuram to migrate to eke out a living. Parshuram migrates to the town of Ranchi each year, where he pulls a rickshaw to add to his income. "I go there for 8 to 10 days, then I come back," he says. "Then I go again. But how much can I get from pulling a rickshaw? I have had to take loans."

Parshuram's life continues to read like a textbook case of poverty. Like 61.5 per cent of Bihar's people, he is illiterate. He cannot measure his land. "I don't know how to measure," he says. "What is an acre? What is decimal? I don't know. . ."

If dwindling land does not provide enough food for families like Parshuram's, neither does it provide enough fuel for them. Villagers in Gerebir, like villagers all over South Asia, obtain energy from biomass – trees, crop residues, and dried dung. Most of this biomass is collected rather than purchased.

Shrinking land holdings mean shrinking crop residues. This, coupled with declining common lands and dwindling forests, has culminated in a biomass crisis in villages like Gerebir. Women, who traditionally are responsible for collecting fuel, are the worst affected. "Earlier, the women used to spend three or four hours getting firewood," says Pradan's Gupta. "Now they go early in the morning and come back in the evening."

Every illiterate village woman understands the destructive potential of dying forests. Ramni Devi rues the decline of the forests as she pulls out potatoes alongside her brother-in-law. "The forests are totally finished," she says, pointing to a hill beyond the river. She supplements the thin twigs and branches she collects with cowdung, an inferior form of fuel. "What can I do?" she asks. "If I don't use dung, where will I get wood?"

For most women, it is not possible to trek the long distances required to get firewood. According to one estimate, about seven or eight years ago, rural women in Bihar could find firewood within one or two kilometres of their homes; today they have to trek eight to 10 kilometres per day in search of the same firewood.

If this biomass crisis is largely visible in Gerebir's homes through longer working hours for women, other less visible symptoms of the biomass crisis are more insiduous. Ramni Devi merely hints at what fuel shortages mean when she says, "Food cooks better on firewood. But where will we get firewood?"

What she hints at is clearly articulated by Bina Agarwal of the Institute of Economic Growth, Delhi University, in a paper on the fuel crisis. Agarwal points out that fuel shortages drive villagers to shift to foods that require less fuel, but are of lower nutritional value. Some are forced to miss meals and go hungry; others eat raw, or less-nutritive partially-cooked food.

Such measures affect women the most. "Women (and female children) face more severe nutritional consequences from such shortages than males because of a systematic bias against them in the distribution of food within the family," writes Agarwal. This unequal distribution also means that women do not get the extra food needed to make up for the additional energy they expend in working longer hours.

This biomass crisis – coupled with inadequate land – is forcing many villagers to resort to a complex set of mechanisms to stave off hunger. Selling firewood is one such mechanism. Tree after felled tree in the rural Ranchi area records the reality that people are being forced to cut off their livelihood systems to fill their stomachs. By one estimate, two to three million people in India

are so dependent.

Selling firewood contributes to deforestation in a way that gathering firewood for rural household consumption never can. The National Council of Applied Economic Research estimates that nearly 75 per cent of firewood used as domestic fuel in rural north India is in the form of twigs and branches which does not lead to tree destruction. This means that villagers do not destroy trees for their own consumption, but only when they are forced to sell it for others to consume.

Population density, land hunger, deforestation, fuel shortages – how can such a vicious circle be broken? Opinions differ. While some development practitioners stress the need for reforestation and community forestry schemes, others champion the cause of appropriate technology, improved agricultural practices, and equitable land reforms.

That population is also part of the problem is evident from one Gerebir farmer who says, "I have less than two acres, but I have three sons."

But considering population as an integral part of the problem does not mean that the solution lies in sterilizing campfuls of village women, or showering them with contraceptives without explanation of possible side-effects.

Rather, it means empowering women in the fullest sense of the term: ensuring that they have enough food to eat and clothes to wear, that they are educated, that they have a say in the household, that they look after their bodies and health, are not beaten by their husbands, are rewarded for their labour, treated during their ill nesses, and given the means to understand and control their own fertility. Perhaps then, and only then, will the forests stop dwindling.

"Give me an oak forest and I will give you pots full of milk and baskets full of grain." – Song of Indian hill women. ■

View from the village 2

Empowering the women of the Sahel

Pierre Pradervand **tells the story of the Naam movement in Burkina Faso through the life of one of their women leaders, Ramata Sawadogo, and visits the village where the Naam family planning programme started.**

Ramata Sawadogo is typical of the new breed of grassroots leaders who are emerging by the thousand all over Africa. A mother of two in her mid-thirties, she radiates joy and intelligence. One feels a person driven by a deep compassion, with a far-reaching vision of what African women are capable of achieving.

Born in Ouahigouya, in Northern Burkina Faso, to parents who were peasant farmers, she recollects with great fondness her childhood years keeping the family herd, and her deep love for animals and nature. "Sometimes, after a day in the fields, I didn't even feel like coming home" she recalls. When asked who was the most remarkable person she met in her lifetime, Ramata immediately remembered one of her school teachers who stubbornly refused to ever consider any child as 'hopeless', including some serious delinquents she helped return to a better path.

At the end of her primary studies, Ramata took a variety of courses in the field of health, where she started working. But she found work in this field profoundly dissatisfying, because she was usually simply dealing with the symptoms of poverty. "The suffering I witnessed, usually due to extreme poverty and hunger, upset me so deeply that sometimes I could neither eat nor sleep at the end of the day."

So Ramata gladly accepted the invitation of the Naam movement to work for them in the field of health education – because the Naam had a less specialized, more holistic approach to health and development. She was involved in this work from 1980 to 1986, during which she introduced family planning to villages which were among the poorest in the world.

"Working as a health educator, I realized that there was a real need for family planning. In some of the villages, the women walked 10-15 miles for wood and water. They were overburdened with work – in fact in many instances their workload was increasing, in great part due to environmental deterioration. But the women didn't dare express their desire for family planning openly, out of fear of their in-laws and other relatives. In Mossi society, any mention between men and women of sex-related questions was forbidden, even in the family. But more importantly, the parents-in-law, who belonged to the older generation, were not in a position to understand the sociological and other changes which were beginning to make family planning a necessity."

One reason for this was the fact that the elder women had all practised birth spacing. Breast-feeding could easily last three, even four years, and wives could wait that long before resuming sexual intercourse – till the child was weaned and started eating *tô*, the staple, millet-based dish which some families ate three times a day, 365 days in the year. Because of the polygamous organization of society, most men had at least two wives, so this post-partum abstinence was not a problem for them.

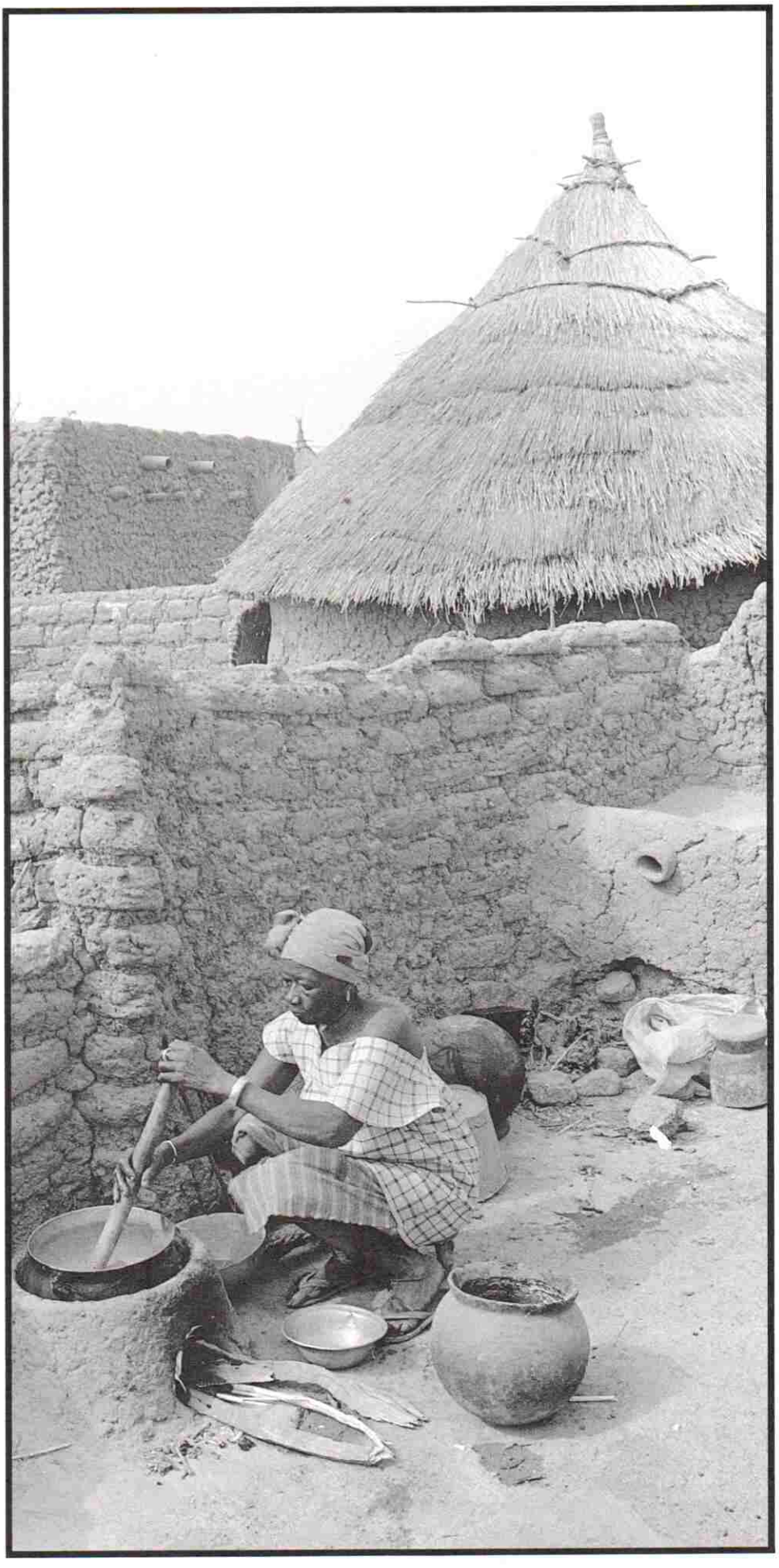
If the woman became pregnant before the child started eating *tô*, neighbours and in-laws would accuse the wife of *not wanting* more children. This was due to the belief that breast-feeding during pregnancy was unhealthy for the suckling child. So the mother who was caught in such a situation would wean her child very abruptly. As *tô* is not very digestible for young stomachs, the young child would frequently die. In other words, the women were accused of lacking in

compassion for their child, of being too hasty to resume sexual intercourse.

Ramata adds: "From the 1960s onwards, village behaviour patterns started changing. Women started talking more openly to their husbands, some started travelling to the city, men emigrated massively to coastal countries like Ghana and the Ivory Coast. They would return home with tales of strange new customs. As a result, during the period of post-partum abstinence, wives started sleeping in their own huts, closer to that of the husband, out of sight of the ever-watchful chaperoning of their mothers-in-law. So they resumed sexual intercourse earlier, and birth intervals started decreasing. The result was a growing number of *yâanbilo* (the Moré word for abruptly weaned and undernourished children)."

Traditional methods of contraception had always existed, although they were not very efficient. Slowly, from the 1970s, the existence of more modern methods started to be known. Now, thanks to movements like the Naam organization and other peasant farmer movements, much more information is circulating on all topics, including family planning.

At first, the issue was a very sensitive one, Ramata says. "We convened a meeting of women from many villages, at which we started by speaking about food and nutrition. Some of the mothers-in-law complained that there were more and more children and less and less food. This was due not only to slowly decreasing infant mortality, but also to decreasing birth intervals: two-year intervals in the rural areas, instead of three to four. The women said health issues were a top priority. They also mentioned decreasing incomes due to environmental deterioration. The women then asked if the Naam movement could get the men to accept the idea



Woman in Yatenga province using a locally designed fuel-efficent stove.

MARK EDWARDS/STILL PICTURES

of having births only when they were desired. So I asked the women: do you prefer to have many children with the risk of not being able to care for them properly, or fewer you can really care for?

"I used an image taken from their everyday experience of planting millet and sorghum. In our region, the farmers plant 3-4 seeds in a small oval area called *sebogho*. We asked the farmers if they preferred planting 3-4 seeds, or 10-12. All replied '3-4'. 'If there are even 4-5 seeds, we take 1-2 back', they replied. Well, from then onwards, it was very easy to get them to accept the idea of family planning and adequate birth spacing."

Ramata was very careful to stress that family planning exists as much to help infertile couples have children, or to assist women who have repeated miscarriages or premature births to have healthy children. This is extremely important in a culture where sterility is *the* main tragedy that can befall any woman.

Then, in 1986, Ramata realized that less reproduction wasn't much use without more production, so, with the participation of 14 other women from the Naam movement, she started a training programme for the production of soap, using appropriate technology and local ingredients. (Around three-quarters of all diseases in Africa are water-borne or due to lack of hygiene, and soap represents a significant expenditure for household budgets).

"Next, we transformed the whole operation of soap training into a co-operative. The Naam organization gave us all the material and stocks for making soap (worth 7 million CFA francs or $23,000) as a loan we are now paying back."

The co-operative has made a remarkable start. "We are not only selling the soap locally, but we are little by little getting the peasant village groups who want to train their members in soap manufacture to pay for the training, which becomes an additional source of income." Sales of soap have already reached the sum of 40,000 CFA ($135) per week, which represents the monthly income of a civil servant at the lower end of the income scale.

Bent on repaying their debt and expanding into other areas as soon as possible, the 15 members of the co-operative had started selling their services to farmers as simple labourers. They have also started market gardening.

"I am most optimistic for the future of our co-operative", Ramata adds, her smile illuminating her gentle yet determined features. "We not only manage to

A visit to the village of Saye

It is a Sunday afternoon. The sky is overcast, and rains are still falling occasionally. Farmers are harvesting their fields as we approach Saye – the country has had the best rainfall in 20 years, and the stalks of sorghum sway gently in the wind, the heads heavy with ripe grain.

Despite an absence of many years, Ramata is immediately recognized by some of the 28 women and village elders awaiting us, not to mention the usual crowd of children, curious spectators of the forthcoming discussion.

For one who was active in the field of family planning in Burkina Faso 20 years ago, the most striking factor is the complete change of attitudes toward sexuality and family planning. In the early 1970s, at the request of a teacher friend from Kaya, I had shown a film on sex education in this small town. (My friend had seen the film beforehand and unwisely recommended its projection.)

At one moment during the film, two pen-drawn outlines of a teenage boy and girl standing naked next to each other appeared on the screen. The deep roar that went up from the crowd was unlike anything I had ever heard in my life. I really feared that the local 'prefet' would have me thrown in jail for disturbing the public order! It was clear that a powerful taboo had been violated.

Today, in Saye, the most amazing thing was how easily men and women of all ages freely joked and laughed about sexual issues and family planning in a good humoured, yet never superficial manner. Elderly 'El Hadj' Sawadogo, president of the local Naam group (El Hadj is a term of respect used to address the people who have gone on pilgrimage to Mecca) was cracking jokes which had the whole assembly doubled up in laughter. Only a few years ago, such a scene would have been absolutely inconceivable. It stresses the rapid and far-reaching changes that have happened in the field of sex roles and man/woman relationships, especially in the 'empowered' villages where peasant organizations have been active.

Yet taboos are still active. One feels the younger wives, quite a few of whom are breast-feeding their babies, are still reluctant to reply concerning the number of children they want. The women who want 7, 8 or 9 children have no inhibitions about saying so openly, while those who want only two, three or four hesitate to express such a culturally unorthodox reply.

But everyone present agrees that family planning is a good innovation. "It diminishes the suffering of women. Also, it is good because we do not have enough to eat," adds Fatoumata Ouedraogo. Although the idea of spacing births seems generally accepted, there is still an immediate resistance to the idea of stopping births.

Among the attitude changes that have happened in past years, the participants describe the growing tolerance towards pre-marital pregnancies. Whereas before it was considered extremely shameful to become pregnant before marriage (a shame that was borne by the mother as well as the pregnant girl), public attitudes are today much more tolerant. Interestingly, participants mention a growing intolerance of polygamy among younger women, which leads to increasing stresses among the wives of polygamous households. ■

FREIRE WRIGHT

make regular repayments on the loan, but are saving too. We plan to extend our activities to the field of trade, and start barter exchanges with women in the North of the country, exchanging for example vegetables for calabashes from Djibo."

This poor region has seen much progress in recent years, with lower mortality from endemic and epidemic diseases. Attitudes are changing too. "The workload of many women is beginning to decrease," says Ramata. "Men have started fetching wood and water with hand carts. Sometimes they even offer to look after the children or lend their bicycles to the women to go to market. All this was unthinkable even 10 years ago."

Asked what messages she would like to pass on to her African sisters, Ramata replied: "First, I would like to encourage the women to convince their husbands that family planning is, for us, spacing births rather than stopping them. Then, together, they will be able to convince the family – in-laws, aunts and so on – to accept it.

"My second message is for the health personnel. A farmer only goes to hospital if he is extremely sick. Going to hospital for family planning services represents a major mental revolution. Most farmers know nothing about the different contraceptive methods. It is important that the health personnel welcome them with kindness and great courtesy. This is extremely important. If a woman is poorly received, the whole of her village will know about it and will be prejudiced against the family planning services offered in that centre.

"Finally, health personnel need to take great pains to explain that family planning also exists to help couples overcome all their gynaecological and other problems like infertility, sexually transmitted diseases, painful menstruation and disturbances of the menstrual cycle. The human and social dimension of family planning is as important as its demographic dimension. To forget that can be costly." ■

Swiss development expert Pierre Pradervand is the author of Listening to Africa: Developing Africa from the Grassroots *(Praeger 1990).*

View from the village 3

Barú fishermen band together for a better life

The complex links between population, local resources and the environment are demonstrated clearly in the fishing communities of Colombia's Caribbean coast. *Sarita Kendall* **reports from one of them.**

Barú is so well screened by mangroves that only the church roof can be seen from the sea; and the church roof is more important than might be expected, because it provides a large catchment area for rainfall in a village where fresh water is scarce and precious. In the dry months – there are up to ten a year – boats bring water from the city of Cartagena, some 40 kilometres north.

A few fine wooden houses with intricately carved balconies cluster around a single huge tree in the centre of Barú. They belong to the families that made good during the copra boom of the 1930s and 1940s, but most have been growing dilapidated since disease struck coconut plantations all along the Colombian coast. Barú, which had become briefly prosperous when the proceeds of the coconut harvest were invested in contraband goods, lapsed back into isolation and bare subsistence.

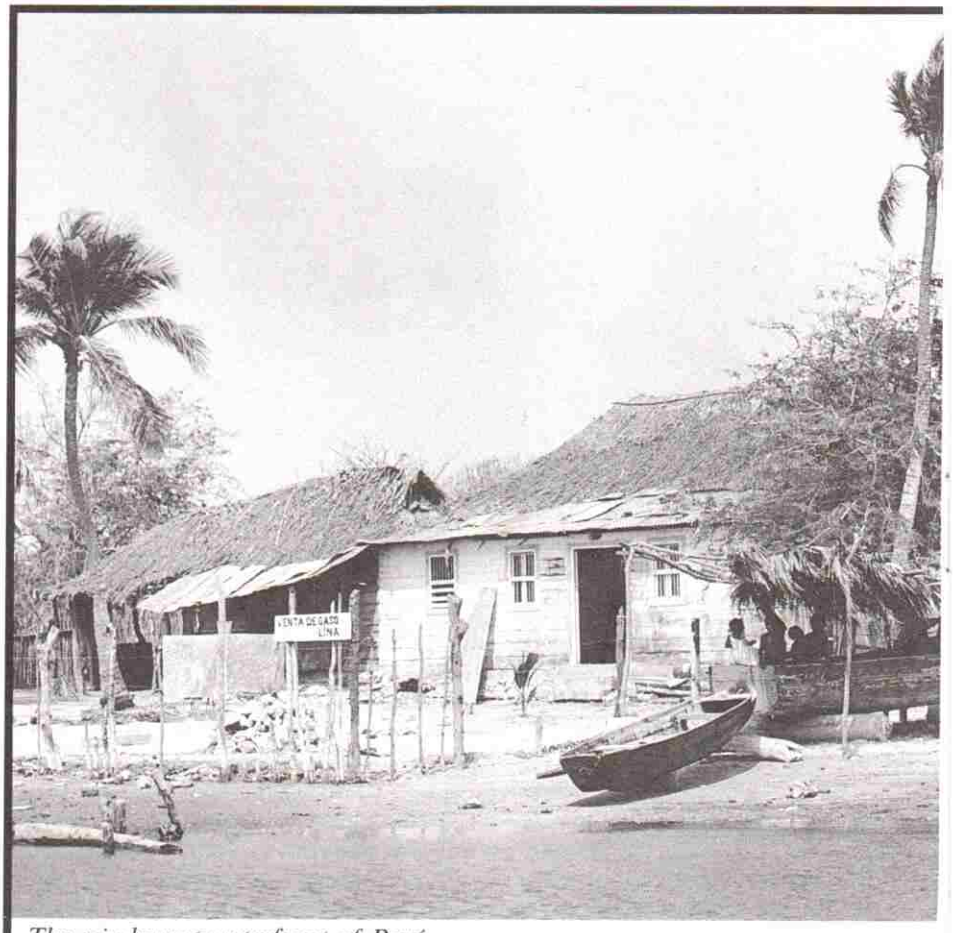
Descendants of slaves who worked on haciendas, the 2,500 villagers have lived off the land and the sea. But now, they say, the trees are dead, the earth is dry, the mangroves are being cut down and even the fish have deserted Barú's waters. In addition, the peninsula's lagoons and beaches, as well as the nearby coral islands once inhabited by people from Barú, are attracting the rich of Cartagena and inland cities.

"They've bought nearly all the land – with time they'll be throwing us off the end of the peninsula. We can't even walk along the shore any more because they close off the access and keep guard dogs. There's no grazing land left, so the cattle and goats have been sold. We're completely humiliated," said Andrea, one of many Baruleros who cook and clean for hotels and restaurants on the islands.

Although Baruleros are ambivalent about the tourist trade, it is providing jobs close to home and a ready market for the best of the fishing catch. On the other hand, the mangroves farther up the coast are disappearing faster than ever to make way for jetties and sandy bathing beaches. The oysters, the crabs and the small fish that laid their eggs among the twisted roots have also disappeared.

Other pressures have depleted resources too; "Thirty-five years ago, when I was 10, I used to fish for lobster and conch right here, in this lagoon. But nobody would even try now. There used to be schools of fish within easy paddling distance. But the big fishing boats from Cartagena come in close, and their nets take everything, big and small, from the sea floor. The divers tell us there's nothing left down there. Cartagena has grown enormously and there's great population pressure in the area," said Milciades Zuñiga, who was born in Barú and now runs a community development organization, as well as teaching at Cartagena University.

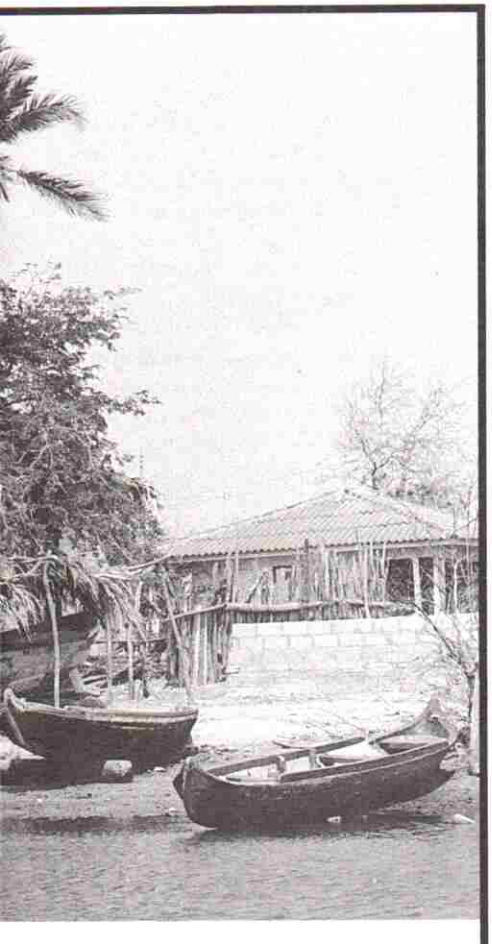
Most Baruleros leave the village for part, or even all, of their working lives. "The families were so big," explained Alva Villalobos, who herself had nine children. "It hardly rains any more and there's no land left for growing fruit trees. My husband just catches enough fish for the family. People have to



The windswept waterfront of Barú.

go elsewhere to find jobs – I only have one son and one daughter here, the rest went to (Colombian) cities, and one to Caracas. Things are changing, and nowadays women have five children, or maybe three."

Doña Alva has a contraceptive post in her shop, which is primarily a chemist's. (It is one of 11,000 distribution outlets set up and supplied by Profamilia, IPPF's affiliate in Colombia which now provides services to most of the 67 per cent of Colombia's couples who practise family planning.) Doña Alva sells contraceptive Pills and is qualified to give injections. She has also taken groups of up to ten women to Profamilia's Cartagena clinic for sterilization. The demand for condoms has risen dramatically since somebody in Barú died of AIDS.



BOTH PICTURES: SARITA KENDALL

The children suffer from chest complaints and the water shortage.

"What we really need here are talks for the young girls. They all have boyfriends at the age of 14, and then there's a pregnancy. . . the young need the opportunity to talk about sex outside the home, with somebody who can advise them.- Now that we have a few secondary school classes going, we could do something about it. . . "

Barú has a properly equipped health centre with a full-time doctor and a dentist thanks to the Fundación Corona, a private sector foundation based in Bogotá which has supported various community projects. These include training courses for artesans (who have had some success in selling craftwork made from local raw materials) and for dressmakers.

The foundation's biggest project – a fishing cooperative – is just beginning and will have Inter-American Development Bank support: "There are 300 fishermen in Barú, about half of them full-time and the rest occasional. We formed a fishing committee with 30 to 40 of them – some are old fishermen who used to dynamite for bait, others are younger ones wanting to learn better methods. We've given credits for nets to catch the bait, so there's no need for dynamite, and they've paid back in good time. Now the committee will become a cooperative venture," said Guillermo Carvajalino of the Fundación Corona.

Barú is just one of many fishing villages on the coast south of Cartagena with similar problems. Those who once fished in Cartagena Bay rarely do so now, because of the high degree of pollution from industrial waste and city drains. They too paddle along the Barú peninsula, keeping close to shore in their small, vulnerable canoes. The concentration of fishermen, combined with years of reckless dynamiting, have left poor pickings.

One of the ideas behind the Barú cooperative is to enable fishermen to go further out where fish are more plentiful. This means bigger boats, as well as refrigeration and marketing strategies to cut out intermediaries and raise local income. South of Barú another cooperative, started with the help of Occidental and associated oil companies, has developed a new approach: a mother ship owned by the cooperative tows canoes out from the coast, and takes their catch on board for the return.

Fishing and tourism appear to be the main sources of earnings for Barú in the future. But nobody has studied fishing resources in the area, and tourism – with large new luxury hotels planned for the peninsula – will bring extra problems. "We have to solve the water problem before we ourselves can benefit from tourism, instead of just being servants," said Doña Mariela, who runs a small restaurant as well as helping at the health centre. "Last year, the electricity arrived and that was a big thing for Barú."

Unfortunately, as Doña Mariela explained while she drew bitter, slightly salty water from one of the village's two public wells, the water problem requires a much more substantial investment. Either the channel through the mangroves must be dredged and widened to allow fresh water barges through, or a pipeline connection must be built along the peninsula. And, as the track out of Barú is barely passable for a 4-wheel drive vehicle, this will take time, intensive lobbying and money. ■

Political non-speak

RICHARD WILLSON

This is election year for Britain, the United States, France and Italy. In none of these countries has environment been high on the election agenda. In the first two countries, it seems to have faded from the scene altogether: ne'er a word. This is absurd in the year that is to feature the UN Conference on Environment and Development. Why the gross omission?

Well, say the politicians, we have more pressing concerns right now, notably the economy. This ignores that fact that we are degrading the natural-resource base that underpins much economic activity. When farmers allow topsoil to erode, when loggers overcut forests, when industries cause acid rain, and when we all contribute to mountains of waste and cause pervasive pollution of myriad sorts, our economies suffer. But the marketplace does not register these setbacks. Rather it tells us that more food, timber, manufacturing and consumption adds cubits to the stature of our GNPs, so all must be well.

Fortunately a number of countries are engaging in "natural resource accounting". This means they subtract from GNP growth the concealed environmental costs of economic activity. In a variety of cases, such as Germany, Australia, Indonesia and Costa Rica, it turns out that roughly half of GNP advance each year is cancelled out by soil erosion, pollution, excessive logging and other environmental deficits. This has momentous implications for our view of our economic health – and hence for our true recovery from recession, for stable interest rates, for long-term employment and the like. Yet we hear not a voice on the hustings about this key factor.

In a host of ways, indeed, we are engaging in ecological deficit accounting. As Lester Brown of the Worldwatch Institute points out, we deflate reported economic growth with a price deflator; how about applying an environmental deflator so that we can measure real economic progress? And where is the enterprising politician who will tell us the true story about our economies?

Alas, politicians often sound so ecologically illiterate they might think a food chain is a line of supermarkets. In the United States most politicians remain resolutely opposed to an increased gasoline tax for citizens who kick far more carbon into the global skies than do any others and thus do more to destabilize climate in the new world order. Gasoline is now cheaper than bottled water in the United States; it is only a quarter the price it is in most of Europe. If Americans were to pay double their present price, they would be paying no more in real terms than they were in the early 1980s after the second OPEC oil price hike. The early 1980s, moreover, were a time when Americans were entering upon the most prolonged stage of economic growth known in the United States – so how could a hefty increase in gasoline tax wreck the US economy, as is asserted by White House advisers?

Some day we are all going to have to pay the deferred costs of global warming. When we do, the costs will be far more than whatever costs might be entrained by a hefty gasoline tax. In point of fact, a gasoline tax among other incentives for energy conservation would be splendid news for the American economy. From the time of the first OPEC oil price hike in 1973, Americans have been practising a modest amount of energy conservation. They have thereby saved their economy $100 billion a year, and made it generally more efficient and productive, also more competitive in international markets (which helps US foreign debt, the largest in the world). If Americans were to practise energy conservation on a scale to match Western Europeans, they would save their economy $200 billion a year; and if they matched the Japanese, $300 billion. This latter figure is no small sum: it exceeds the Federal deficit or the Pentagon budget.

Such figures put into perspective the relatively paltry sums that are needed to ease the debt crisis, save the lives of eight million children dying through easily preventable causes' or provide the $4.5 billion a year which UNFPA estimates must be spent internationally to give many more women a true choice over childbearing and bring population growth down to its median trajectory by the year 2000.

Even UNCED's estimated of $125 billion annual spending to help the environmentalcause in the south does not seem so monumental.

Would it really be political suicide for American leaders to listen less to the special pleading of lobbyists in the oil and car industries and rather more to those who urge the long run interests of us all? ■

Norman Myers is a Worldwide Fund for Nature gold medallist, author and consultant on environmental issues.

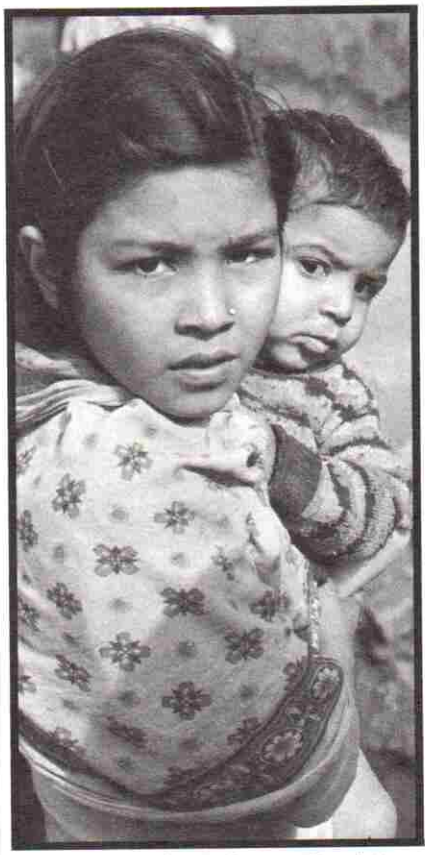
Pakistan acts on population

by Javed Malik in Islamabad

After two decades of indifference, Pakistan is once again confronting its population problems. The Prime Minister, Nawaz Sharif, made a public commitment to a population programme last July, the first head of the government to do so since the late President Ayub Khan in 1969. The aim is to bring the population growth rate down to 2.5 per cent a year by the beginning of the next century, from the present rate of 3.1 per cent.

Reducing population growth was part of the election manifesto of the ruling Islamic Democratic Alliance during the last elections. Soon after taking over, the government appointed a prominent politician, Syeda Abida Hussain, as Adviser to the Prime Minister for Population Welfare, with cabinet rank.

She toured the length and breadth of the country, in an effort to popularize the policy and generate mass support for it. She also outlined the "multi-sectoral, multi-dimensional" approach that would be taken in an Accelerated Programme in which all sectors will contribute to the promotion of a small family norm, while family planning services will be provided as a package of several services such as maternal and child health. To create a mass appeal for the programme, the Prime Minister addressed a National Population Conference, and made a strong emotional plea for a slowdown in growth. He also directed all the government ministries and departments, along with their political heads, to provide all possible support. Another sign of the government's firm commitment came when the expenditure of all the ministries was cut because of severe resource constraints, apart from that of the Ministry of Population Welfare, which remained at Rs 636 million (nearly $26 million), with a supplementary grant of Rs 80 million ($3.25 million) to cover the additional costs of the accelerated programme.



SEAN SPRAGUE

Children in the Pakistan Punjab.

As part of the new strategy, there will be a programme of research and surveys to provide base data and test the impact of the programme. There will be attempts to tease out the reasons for the unsatisfactory performance in the past – Pakistan was one of the first developing countries to embark on a programme to curb population growth in the 1950s, but very little has been achieved. The population has now reached the 115 million mark – and could double by 2015 unless urgent action is taken.

The primary reason for the lack of success in the past is the low level of commitment from governments over the last two decades. They feared a backlash from certain religious groups if they pursued the policy very forcefully.

This time the religious parties and the opposition have made only token resistance to the emphasis on family planning. In part this reflects the fact the some of the religious parties are now themselves in the government, but also that most of the major sources of Islamic interpretation – such as Al-Azhar of Egypt – have opined that family planning is not un-Islamic. Moreover, the religious leaders feel that the people, beset by economic hardship, want to practise family planning and any opposition to it will make the religious leadership unpopular. Another reason for past failure is said to be the low educational level in the country (the literacy rate is around 30 per cent). But a recent study has shown that it was not the lack of awareness of family planning, but the lack of service delivery outlets that prevented much response to earlier programmes.

The study also indicated that 60 per cent of married women either do not want more children or want to delay their next birth, but only 20 per cent have access to family planning services. The shortage is particularly acute in rural areas: while 54 per cent of the urban population of 35 million is covered, only 5 per cent of rural people have access to services. The accelerated programme aims to increase coverage to 20 per cent of the total rural population by the middle of the current year.

The targets will not be easy to achieve. Apart from the bureaucratic red tape which ties up the country, the inefficient and sometimes corrupt system of government could create further obstacles to progress.

The top managers involved in the programme, however, maintain that this time will be different, especially in view of the fact that the Prime Minister sees a reduction in the population growth rate as crucial for the success of his industrialization and other economic initiatives. ■

Essay: Peter Adamson

The power of planning births

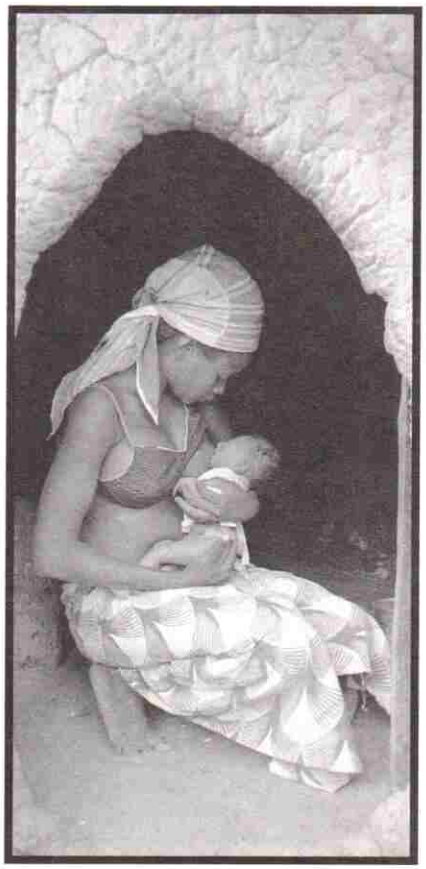
The responsible planning of births is one of the most effective and least expensive ways of improving the quality of life on earth – both now and in the future – and one of the greatest mistakes of our times is the failure to realise that potential.

Family planning could bring more benefits to more people at less cost than any other single 'technology' now available to the human race. But it is not appreciated widely enough that this would still be true even if there were no such thing as a population problem.

In part, an awareness of the full range of the benefits available from the responsible planning of families has been hidden from the public view by the clouds of controversy which have long hung over this issue. But such is the range of methods now available, and such the experience that has been gained in recent years, that family planning can now be promoted and practised in ways which are sensitive to the religious and cultural contours of almost all societies. The benefits of family planning need be denied to no one.

Those benefits may be briefly summarized:

- First, family planning could save the lives of perhaps one quarter to one third of the 500,000 women who now die every year from causes related to pregnancy and giving birth. It could also prevent unknown millions of disabilities – many of them painful, permanent, embarrassing, and secret – which are the common consequence of high-risk and often unwanted births.
- Second, family planning could prevent many if not most of the more than 50,000 illegal abortions which are now performed on women *every single day* and which result in the deaths of 150,000 young women every year.
- Third, family planning can drastically improve the quality of women's lives – in both short and long term – by reducing the physical and mental burdens of having too many children too close together, or at too early or too late an age. It can increase the time available for women's education, for vocational training, for earning incomes, for improving child care, for community activities, for personal development, and for the rest and leisure which is virtually unknown to millions of women in the developing world today.
- Fourth, family planning could save the lives of several million children each year. Family planning would prevent, predominantly, those births which are known to be 'high risk' – the births which are within two years of a previous birth, or to mothers who are under 18 or over 35 or who already have three or four or more children. Because the great majority of child deaths are associated with these risk factors, the well-informed timing and spacing of births would result in a far more than proportionate reduction in child deaths.
- Fifth, family planning can significantly improve the nutritional health of children throughout the developing world. Fewer and more widely spaced births allow mothers more time for breast-feeding and weaning, and helps to prevent the low birth weights which are strongly associated with malnutrition throughout the earliest years of life.
- Sixth, family planning improves the quality of life for children. The quality of child care – including play and stimulation as well as health and education – inevitably rises as parents are able to invest more of their time, energy, and money in bringing up a smaller number of children.



Newborn baby in a village in Burkina Faso. Better hygiene and family planning would mean that more babies survived.

MARK EDWARDS/STILL PICTURES

For all of these reasons, a renewed effort to put family planning at the disposal of all would advance not one but many of the basic human goals for the year 2000 which were agreed at the *World Summit for Children*.

These benefits alone would be sufficient to justify the claim of 'family planning for all' to a special priority in a new world order. But it would, of course, also help to resolve one of the other great problems on the human agenda – the problem of rapid population growth.

Approximately one pregnancy in three in the developing world this year will be not only unplanned but unwanted. There is therefore a vast unmet demand for the knowledge and the means of family planning.

Evidence from the World Fertility Survey suggests that if all women in the developing who do not wish to become pregnant were empowered to exercise that choice then the rate of population growth would fall by approximately 30 per cent. By the year 2025, that fall would translate into 1.3 billion fewer people – roughly the equivalent of the population of China today.

Even this long list of benefits

does not capture the potential contribution of family planning to the improvement of the human condition. For it fails to record the synergisms which mean that the total benefit would be very much greater than the sum of the parts. Within the sphere of human health, family planning reinforces, and is reinforced by, progress towards almost all other improvements in the health and well-being of both mothers and children. The timing and spacing of births, for example, leads to improved health and nutrition, which in turn leads to fewer deaths; this helps to build confidence in family planning and the tendency towards more widely spaced births. An upward spiral is therefore set in motion. But there is also a wide circle of synergisms of which birth spacing and family planning stand close to the centre. Fewer and more widely spaced births improves the quality of women's lives, of child care, of family life, of education; all of these contribute to social and economic progress, which in turn contributes to the wider acceptance of family planning.

The permutations of such synergisms are almost limitless. And uniting them all is the fact that family planning gives people more control over their own lives and enables them to bring about other improvements in almost every aspect of those lives. It means better health and wider opportunities for hundres of millions of women. It means fewer deaths and better physical and mental growth for hundreds of millions of children. It means improved standards of living and less strain on social services. It also means slower population growth and an easing of environmental pressures in the future. The costs, in relation to these benefits, are almost absurdly small.

When so much stands to be achieved by the meeting of an existing demand and at so low a cost, it seems reasonalbe to propose, for the agenda of any new world order, than an effort now be made, on an entirely new scale, to put the knowledge and the means of family planning at the disposal of every couple of child-bearing age before the end of this present century. ■

Peter Adamson is Editor of Unicef's State of the World's Children 1992.

Centre for African Family Studies (CAFS)

The Centre for African Family Studies, based in Nairobi and Lomé, is an independent, non-profit institution which provides training and orientation on family planning and population issues for family planning staff, development professionals and policy makers in Sub-Saharan Africa. Courses in 1992 cover such topics as:

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Short Course on Family Planning Data Collection
Middle Level Management in Family Planning
Health Communication for Journalists

CAFS provides courses and seminars on a regional, sub-regional and in-country basis in the English and French languages. It welcomes enquiries about these and other services, including research, consultations, information and documentation and technical assistance.

All enquiries should be addressed to: Prof. H.W.O. Okoth-Ogendo, Director of CAFS, PO Box 60054, Nairobi, Kenya. Tel: 448618. Fax: 448621.

CAFS is an institution of the International Planned Parenthood Federation.

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BOOKS

Women as agents of change

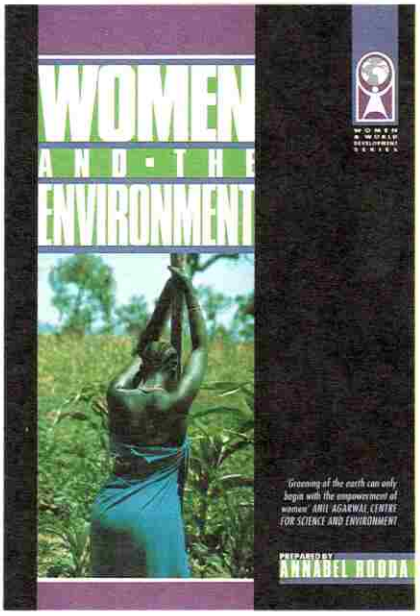
Women and the environment
Prepared by Annabel Rodda
Zed Books, 1992. £9.95/$15.95 (paperback); £29.95/$49.95 (hardback)

It will be a great pity if the title of this book marginalizes its readership. It is not only about women; it is about restoring, sustaining and saving our planet. A self-styled resource tool, it deserves the serious attention of educators, policy-makers, development planners and the media. Its central message is that while women are the first victims of the degradation of the environment, they, more than men, have the motivation, knowledge and ability to do something about it – if only they are empowered to do so.

Annabel Rodda prepared this book; she did not write it. Its authority derives from the vast amount of literature she has selected for quotation. Much use is made of personal experiences, case studies and the work of NGOs. UNFPA and IUCN figure prominently among the sources used and several articles from IPPF's *Earthwatch* are quoted. But her own text, linking these sources, provides a sense of unity that helps the book deliver a powerful message. Women are the potential cornerstone of sustainable development and, despite their exploitation, they are becoming agents of change.

This is not a catalogue of women's woes, although there are powerful descriptions of the burdens placed on women by the rapid depletion of natural resources. The author looks first at the environmental issues that will preoccupy the UN Conference on Environment and Development, demystifying the science of ecology in the process by offering a layman's guide to the terms most commonly used.

Population, it states unequivocably, "is at the centre of the issues affecting both the physical and the social environments", with special implications for energy and water resources. A strong case is made for family planning: to remove "the economic treadmill" that damages women's health and that of their children; as a means of reducing population growth, and as a tool to enable women to be more efficient environmental managers.


WOMEN
AND THE
ENVIRONMENT
'Greening of the earth can only begin with the empowerment of women' ANIL AGARWAL CENTRE FOR SCIENCE AND ENVIRONMENT
PREPARED BY
ANNABEL RODDA

Development has not benefited women; in fact the reverse is often the case when commercial enterprises such as logging and mining, remove the resource base on which they depend. Their lives change for the worse when they become low-paid labour on someone else's land, when their workload increases, their leisure time is eliminated and their health and intellectual ability suffers from the sheer drudgery to which they are exposed. They are often widows of migration; left behind when men and young people go off in search of a better life.

There are omissions in this book that one would like to see addressed in future. Advice needs to be given to those who plan and execute conservation projects. Little is said about research on gender roles at local sites where conservation measures are planned or are already in place and about the need to analyse the division of labour by both age and sex, in order to get a comprehensive understanding of how interaction with the environment changes over time. IUCN has proposed that, as an essential element of the design and management of conservation projects, social and demographic analyses of local populations should be undertaken to determine the present situation and future trends in population size, distribution, movement, age and sex structure and division of labour.

This book is the fourth in the Women and Development Series of the Joint UN NGO Group on Women and Development. It contains a useful bibliography and a comprehensive list of governmental and non-governmental organizations involved in women's issues.

Frances Dennis

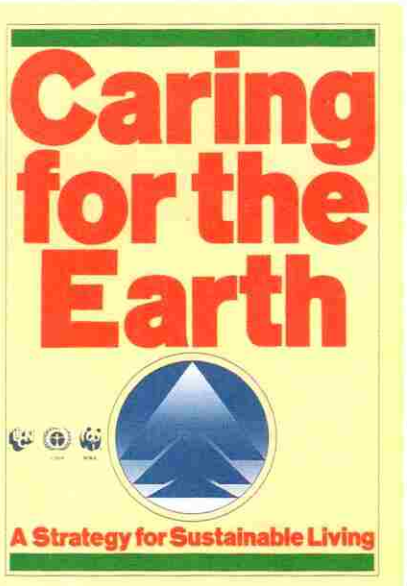
Frances Dennis is former Director of Information at IPPF and a consultant to IUCN.

Received and recommended

Beyond the Limits: Confronting Global Collapse, Envisioning a Sustainable Future. Donella Meadows, Dennis Meadows and Jørgen Randers. *Chelsea Green, USA and Earthscan, London, 1992.*
When published 20 years ago, *The Limits to Growth* concluded that on current trends the limits to growth would be reached within 100 years. Now its sequel, by three of the original authors, argues that the world has already gone beyond many of its physical limits.

Population, Resources and the Environment: The Critical Challenges. Norman Myers. *UNFPA/Banson Books, 1992. $24.75.*
As a basic reader or introduction to the subject, with plenty of case studies and a review of policy responses, this book could hardly be bettered. Also available in shortened, illustrated form from UNFPA under the title: *Population and the Environment: The Challenges Ahead.*

The State of the World Population 1992. Nafis Sadik. *UNFPA, New York.*
A timely, very well illustrated look at population and sustainable development, incorporating the UN Population Divisions's revised long-range population propjections, 1950-2150. These projections are also available in concise and fuller form from the UN Department of International Economic and Social Affairs, New York.



Caring for the Earth: A Strategy for Sustainable Living. WWF, IUCN and UNEP. *Earthscan, London, 1991. £9.95.*
The new World Conservation Strategy, previewed in *Earthwatch* **40** (1990). ■